

BULLETIN
OF THE
CHICAGO ACADEMY OF SCIENCES

**FURTHER STUDIES IN PSELAPHIDAE (COLEOPTERA)
OF MEXICO AND GUATEMALA**

BY

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Northwestern University



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INTRODUCTION

It has been an ambition of the author for some years to . monograph the pselaphids of Mexico and Guatemala. A first step was made in 1942, where, in a general work on neotropical species, the then known pselaphids of these two countries were oriented with respect to the larger neotropical fauna. Later reports (1943, 1944) added species and tentative keys, a checklist and a preliminary discussion of zoögeographic problems.

During this period a great deal of material was received. One collection in particular was of especial value in furthering a knowledge of Mexican pselaphids. This was a collection of some 8000 specimens sent me in July, 1943 by Dr. Alfonso Dampf. Not only were many scattered localities represented, but of notable importance were the detailed ecological data which accompanied each packet of specimens. Dr. Dampf kindly asked me to retain the holotypes and allotypes of new species. A series of paratypes is to be deposited with Dr. Dampf.

The present article deals primarily with new species described from the first part of the Dampf collection ; subsequent reports on this large collection will be forthcoming as time and circumstance permit.

PYXIDICERINI

Bythinoplectus denticornis Raffray

Described on a single male (1896, p. 230, Pl. 10, fig. 16), this species has not been since recorded. The original locality was simply "Mexico." The species has been integrated in a recent key (Park, 1945), and the salient features of the two sexes are illustrated in the present paper (Pl. III, 2, 3). The following records are now available.

1 male, Frontera, Tabasco. Sea level, June 21, 1928, at a light in hotel garden. Collected between 7:30 and 11:00 P. M. A. Dampf.

4 males, 5 females, Jojutla, Morelos. 890 meters elevation, November 9, 1941. Collected between 6 :43 and 6 :45 P. M. (at moment of sunset) by net, from traveling automobile. A. Dampf.

These two records follow the usual nocturnal pattern for pselaphids in general, and the sweeping net record is substantiated by analogous captures by the author in Panama.

JUBININI

Recent acquisitions make a new key to the genus *Sebaga* desirable. This is a key to males and supersedes the key given earlier (Park, 1942, p. 47).

| | |
|---|---|
| Antebasal platform of pronotum perfectly circular | 2 |
| Antebasal platform not circular | 3 |

- 2 (1) Antebasal platform closely invested by the transverse pronotal sulcus, and with its margin overhanging the peduncular column evenly on all sides (Pl. III, 5) ;
 Venezuela *centralis centralis* Raffray (1890) .

Antebasal platform relatively smaller and isolated in the sulcus (Pl. III, 4) , with its peduncular column excentric so that apical part of platform is flush with peduncle and sides and basal parts overhang the peduncle (Pl. III, 5) ; Mexico *centralis ocampi* new subspecies.

- (1) Antebasal platform transversely oval, glabrous, with wide margins (Pl. III, 5) ; Panama *raffrayi* Park (1942) .

Antebasal platform otherwise 4

- (3) Antebasal platform a prominent, amphidiscal or dumb-bell shaped process, with the narrower median portion longitudinally impressed and each of the lateral circular portions bearing a minute excentric foveal pit; Panama *notonoda* Park (1942) .


Antebasal platform otherwise 5

- 5 (4) Pronotal disc medianly slightly gibbous in apical portion, this discal area gradually flattening to form a short cusp-like shelf or a spinoid process over the anterior median area of the transverse sulcus; Mexico *denticollis* (Schaufuss) 1872.

Pronotal disc otherwise formed 6

- 6 (5) Antebasal platform in the form of a minute transverse carina on the anterior median wall of the transverse sulcus; Brazil *dilatata* Raffray (1893) .

Antebasal platform otherwise formed 7

- 7 (6) Antebasal platform a short, wide, rugose, laminoid tubercle arising obliquely from the anterior wall of the transverse sulcus (Pl. I, 8) ; Mexico *lamellata* .

Antebasal platform transversely subovate, polished and complex: a pair of oblique apical foveoid impressions; a pair of minute, approximate, foveal pits at center, and a large, transversely fusiform impression at base (the ensemble giving the appearance of a small mask) ; platform with the margins rounded into the flush base (Pl. I, 9) ; Mexico *neotropica* new species.

***Sebaga centralis ocampi* new subspecies (Pl. III, 4, 5)**

This new subspecies is erected on two males from Mexico. One from El Mante, Tamaulipas, at 80 meters, October 27, 1930, at a light

in a sugar cane field belonging to Elias Calles, between 7:00 P. M. and the following sunrise. Collected by A. Dampf.

The second male from the village of Emiliano Zapata, Tabasco, at light on the Rio Usumacinto, July, 1938. Collected by Cesar Ocampo.

The genotype *centralis* Raffray (1890, p. 300-301, Pl. 6, fig. 3; 1893, p. 49; 1903, p. 514) is not known north of San Esteban, Venezuela. In addition to the critical difference in the structure of the antebasal platform of the pronotum, previously described in the key, *ocampi* has longer and sparser pubescence and is nearly twice the size of the typical *centralis*. Thus *ocampi* has a body length of 1.8 mm., while the Venezuelan population is 1.0 to 1.2 mm. in body length as far as known.

Ocampi is considered here as a northern subspecies of *centralis* Raffray, although no information is at hand on the amount of intergradation, and with accumulation of data this conservative course may have to be altered, and *ocampi* elevated to specific rank.

Sebaga dentkollis (Schaufuss) 1872, p. 455 (*Jubus*)

Described from a male from "Mexico." Raffray (1893, p. 52, Pl. 2, fig. 35) examined the Schaufuss specimen, placed it in its present generic position and figured the insect. A definite locality can be given to the species. One *male* in the present material comes from a coffee plantation, Esperanza, Chiapas, 700 meters, at light on the night of June 30, 1938. Collected by Dr. R. Nettel.

Sebaga lamellata Raffray (Pl. I, 8)

This species was described (1893, p. 50, Pl. 2, fig. 37) by Raffray on a *male* from "Mexico." It is represented in the collection at hand by a definite record as follows.

One male from Monte Alto, Veracruz, between 200 and 500 meters, at light at night, July 3, 1932. A. Dampf. Its area of capture is near the state of Oaxaca.

Sebaga neotropica new species (Pl. I, 9)

Type male. 1.6 mm. long by 0.6 mm. wide. Shining yellowish-brown, with paler appendages and reddish-brown elytra. Pubescence long, sparse and golden.

Head subtriangular, as long as wide, with a pair of flattened, coarsely faceted eyes set at their own length from temporal angles. These angles only slightly rounded, nearly flush with eyes. Occipital margin straight in each lateral third, gently arcuate medianly, with a minute but sharp

median indentation. A pair of large vertexal foveae present ; each fovea at base of a deep longitudinal sulcus ; these sulci narrow rapidly anteriorly, become arcuate and just merge on the front, between the antennal articulations. Frontoclypeal area long and gently declivous to the minute, arcuate labrum. Ventral and lateral areas of head, and maxillary palpi as for genus.

Antennae short, rather distantly articulated, with the interantennal distance of the frontoclypeus equal to twice the width of the first segment ; segments I and II relatively large, subequally long and wide ; III smallest segment ; III and IV minute, transversely submoniliform ; V larger than IV or VI ; VI to X gradually increasing in length and width ; XI largest segment, subequal to tenth in width, as long as preceding two segments united, slight tapered near apex ; club weakly formed of distal four segments.

Pronotum as illustrated, and described in key.

Elytra as in *raffrayi*.

Five tergites visible, with a median length ratio of 2.5/1.8/1.2/1.2/0.6, the last small, subvertical and broadly triangular.

Six visible sternites ; the first very short, other five in a median length ratio of 1.8/1/0.6/0.4/1.2 ; the last medianly depressed, with this median area more heavily granulate and less pubescent than rest of sternites.

Prosternum as in *raffrayi*; mesosternum glabrous save for pubescent prepectoid foveae and median, roughly granular-pubescent mesosternal shield ; metasternum with a thin, black, longitudinal, median carina. Coxae contiguous ; legs slender, simple ; tarsi as for *raffrayi*.

Described on one male, the type, from a virgin rain-forest in the valley of the Rio Huixtla, Chiapas, at 500 meters elevation. The specimen was swept from shrubs during the day of June 24, 1935, between the towns of Musté and Verbena. A. Dampf.

As a whole, the genus *Sebaga* appears to be centered in tropical Mexico, with distinctive populations as follows Mexico-Guatemala (5) , Panama-Costa Rica (2) , Venezuela (1) , and Brazil (1) . The genotype with its subspecies appears to be widely distributed from Mexico to Venezuela, but to retain its distinctive, perfectly circular, pronotal platform throughout this range. The scarcity of the female sex at light suggests a condition similar to that in *Arthmius* (Park, 1943, p. 198 ; 215-216) . Berlese samples of floor mold during the daytime, to obtain both sexes, and copulation records, are needed to clarify some of the problems in this genus.

***Jubus caviventris* Raifray**

Described on one male from Tovar Colony, Venezuela (1890, p. 301-302). There are two males of the species in the Mexican collection. One male from Cuernavaca, Morelos, 1540 meters, April 21, 1930 A. Dampf. The rainy season had not set in, and the capture was at light, at night, on sloping ground, covered with semitropical vegetation, near a mountain brook.

The second specimen was taken by Dr. R. Nettel, November 4, 1939 at light at night, 700 meters, on a coffee plantation, Esperanza, Chiapas

***Phamius myrmophilus* Silvestri**

This beautiful species was described on a female from a colony of the host ant (*Ponera* sp.) at Jalapa, Veracruz by Silvestri (1911), and its diagnostic features illustrated. Unfortunately this pselaphid was omitted from my previous lists (Park, 1942, 1943, 1944) and I am happy to find it in the present material.

A female taken by A. Dampf at light at night, May 15, 1935, on the virgin forested slopes of the Rio Huixtla valley during the dry season. The locality is a coffee plantation, Vergel, Chiapas at 700 meters, in the Sierra Madre de Sur

The abundant, conspicuous pubescence is characteristic of all species of the genus. The present species is especially characterized by (1) the antennal club, in which the segments **VIII**, **IX** and **X** have the basal half erected in a series of small cusps so that the conical apical half appears to rest in a corona ; these three segments are just slightly longer united than the last segment ; (2) the elytra are distinctly longer than pronotum ; (3) anterior and intermediate tarsi have the primary tarsal claw deeply bifid, as illustrated (pl. IX, 7).

The pubescence is dual, consisting of long, more or less bristling setae, and beneath this is seen a very abundant mat of very short, prostrate setae.

EUPLECTINI

***Cupila Cutrimia* mexicana new subgenus and new species**

Type. 0.96 mm. long x 0.37 mm. wide. Uniformly flavous, with abundant, short, prostrate, paler pubescence. Integuments weakly shining, minutely punctulate to minutely granulate. General habitus rather actiform. The following description is brief since proportions and

structure are illustrated : antennae and dorsal surface of body, Pl. XI, 1 ; elytral flank, Pl. XI, 2 ; capitulate seta from ventral surface of head, Pl. XI, 3 ; posterior coxae and sternites, Pl. II, 11.

Maxillary palpi as for *Melba*.

Ventral surface of head with capitulate setae, medianly longitudinally impressed, the impression ending in a large basal gular fovea. Front steeply, simply declivous between the rather distantly articulated antennae.

Antennae eleven-segmented, abnormal, with segment X very transversely and asymmetrically triangular ; segment XI rounded-triangular, and asymmetrically articulated.

Pronotum longer than wide ; very convex disc almost gibbous ; basal third with sharply defined, subcrenulate lateral margins ; a well defined Y-shaped basal sulcus (as in *Allobrox*) connecting the lateral foveae, which latter are quite mesiad of the lateral margins.

Elytra with humeri subdentate as a consequence of the large sub-humeral fovea and associated transhumeral carina

Vertexal, pronotal and elytral foveae large and pubescent. No trace of a dorsal stria, but the dorsal elytral fovea is at base of a short, deep depression.

Abdomen strongly, narrowly margined ; five visible tergites and seven visible sternites. Tergites normal, first deeply impressed at base, but with no basal carinae. Sternites with third and fourth strongly modified as illustrated, the cornuous processes of the fourth projecting so far that their tips are visible from above ; seventh sternite very small and difficult to distinguish

Tarsi with a single, small tarsal claw. Unfortunately the middle pair of legs is absent ; anterior and posterior legs simple

Prosternum not medianly longitudinally carinated ; metasternum medianly gibbous in anterior half, medianly impressed in posterior half. All coxae contiguous, posterior with conical trochantal surfaces.

The sex of the specimen is doubtful. The seven sternites and abnormal antennae and sternites suggest, but do not prove, masculinity. Direct dissection is necessary when additional material becomes available.

The unique type was collected at 5 P. M. during the dusk flight, by sweeping with a net while traveling in an automobile, between Cuernavaca and Mexico City, D. F., 2800 meters. A. Dampf. The capture was made in mountainous country, forested with pines, May 10, 1942.

The generic assignment is doubtful. The specimen runs to *Cupila* in existing keys. If this genus proves tenable, it is the twenty-second

genus of pselaphids known to hold both nearctic and neotropical species. Previously *Cupila* (Casey, 1897, p. 561) was known to hold a single species (*clavicornis* Mäklin) from Oregon. I am unfamiliar with this species, but it is stated to have a pair of basal abdominal carinae. This latter feature, in addition to pronotal shape, suggests a new subgenus for *mexicana*, *Cutrimia*.

The new subgenus is structurally related to several euplectine genera. Its asymmetrical tenth antennal segment separates it from *Allobrox*, *Allotrimium*, *Actium* and *Actinoma*. The complete absence of a discal elytral stria separates it from *Trimium*, *Actium* and *Pseudotrimium*. The tarsi separate *mexicana* from *Allobrox*, the last segment bearing a very short claw and with no secondary claw, even in a slide mount of a leg at 700 diameters.

Melba kentra Park

This species was described on the male sex (1943, p. 185) from Veracruz. The present collection furnished the female sex of this species: one female, swept from vegetation near Paso de Bodegas, February 16, 1932, by A. Dampf. This locality is near Ojitlán, Oaxaca, at about 200 meters elevation.

The female differs from the description of the male in the following particulars: (1) the distal (fifth visible) tergite is transversely trapezoidal, with its posterior margin strongly concave; (2) only six visible sternites, in a median length ratio of 0.6/1.0/0.6/0.4/0.2/1.2 with the last having its posterior margin medianly strongly produced to produce a convex, semicircular outline which is coadapted with the last tergite; (3) legs simple, slender.

Discovery of the female of the species serves to further open the key to the subgenus (Park, 1943, p. 186). The females of *minuta* (Sharp) and *kentra* may be separated as follows: *minuta* has the pair of basal abdominal carinae distant, separated by slightly more than a third of the total segmental width; females of *kentra* have the very minute basal abdominal carinae separated by one-fifth of the total segmental width.

Euplectus guatemalensis Sharp

This was described on the female sex by Sharp (1887, p. 36) from Guatemala. It was redescribed on both sexes by Park (1943, p. 179-178) from San Louis Potosi. The present collection contains a male taken with a Silvestri funnel, July 30, 1939, from a sample of log mold. This sample was at 3000 meters in Desierto de los Leones, a mountain range southwest of Mexico City, D. F.

***Thesium brevicollis* (Raffray)**

This species was described by Raffray (1898, p. 221) on a female specimen in the Schaufuss collection. The original label gave both Yucatan and New Orleans, Louisiana, so that the locality was in doubt.

The material now under study contained two females of this species, attesting to its Mexican distribution. Both were from the same log mold sample cited. previously for *Euplectus guatemalensis*, from near Mexico City, D. F., July 30, 1939.

***Rhexius nevermanni* new species**

Type. Measurements : head 0.21 x 0.33 mm. ; pronotum 0.32 x 0.37 mm. including teeth ; elytra 0.37 x 0.51 mm. ; abdomen 0.42 x 0.47 mm. ; total length 1.4 mm.

Dull reddish-brown subgranular integument, pubescence abundant and short, inconspicuous.

Head very transverse, with small eyes at middle of head length ; subparallel tempora longer than eyes ; occiput medianly deeply concave ; vertex with a median longitudinal sulcus from occipital concavity to a point between vertexal foveae ; vertexal foveae small, mutually very distant, each located anterior of an eye, and just behind a small antennal tubercle, these foveae nude and free ; front transversely sulcate between antennal tubercles, this sulcus ovately expanded medianly ; frontoclypeal area vertical ; labrum small; ventral surface of head medianly, triangularly deeply concave ; maxillary papi pale yellow, proportions as for genus.

Antennae widely separated, with small tubercles, strongly geniculate, 0.47 mm. long ; segment **I** as long as second to eighth segments united (0.13 mm.) , slightly arcuate and distinctly constricted at apical three-fourths, so that first half and distal fourth of length are thicker ; **II** obpyriform, much wider than next four ; **III** briefly obconical ; **IV**, **V**, **VI** transverse-lenticular ; **VII**, **VIII** slightly wider, subtrapezoidal-lenticular ; club of next three (0.20 mm.) , IX, X trapezoidal, XI truncate-pyriform.

Pronotum with apical and basal lobe as for genus. Apical lobe a small transverse pentagon, very transverse, being almost two times as wide as long. Basal lobe large, truncate-cordate, the rounded lateral margins each with three, strong recurved teeth ; a transversely ovate lateral fovea each .side, connected by the transverse antebasal sulcus; disc medianly longitudinally sulcate from, basal bead to very near the apex of the apical lobe, this sulcus consequently in line with the median vertexal sulcus noted above.

Elytra each with four basal nude foveae, the first at origin of an entire sutural stria ; second fovea more basad than others, no discal striae ; flank with subhumeral fovea and a long, strong carina from fovea to apex.

Abdomen with five visible tergites, the first four strongly margined, last hemiovate, in a median length ratio of 2.3/1.8/1.8/2.0/0.1 with first tergite bearing a pair of very divergent basal carinae separated by one half total segmental width. Six simple sternites in a median length ratio of 0.5/1.5/1.0/0.5/0.2/1.4 with last medianly flattened and with posterior margin medianly convex.

Anterior and intermediate coxae contiguous; posterior coxae separated by the median rounded-triangular extension of metasternum. Anterior femur with a short, prominent carinoid tubercle at apical four-fifths. Tarsi as for genus, the third segment bearing a long primary claw and a short, divergent, setiform secondary claw.

Described on one male, the type, collected by A. Dampf, November 9, 1930, on the window of a railroad car, near Santa Lucrecia, Veracruz.

This species is named in memory of Ferd. Nevermann, of San Jose, Costa Rica.

The following key supersedes one given earlier (Park 1942, p. 83).

KEY TO THE NEOTROPICAL SPECIES OF *RHEXIUS*

Antennae with first segment comprising nearly one-half antennal length, as long as segments II to X united; apical pronotal lobe distinctly longer than wide; first tergite as long as next two united; Brazil

elegans Raffray (1909).

First antennal segment shorter; apical pronotal lobe never longer than wide

2

2 (1) First tergite elongate, nearly as long as next two united; Brazil *brasiliensis* Schaufuss (1872).

First tergite much shorter, never approaching the united length of the next two tergites

3

(2) Apical pronotal lobe as long as wide; first two tergites subequal in length; Panama *optatus* Sharp (1887).

Apical pronotal lobe nearly twice as wide as long

4

4 (3) Strongly shining, with sparse, semierect and conspicuous pubescence; first antenna] segment subcylindrical; Mexico *sharpi* Park (1943).

Dull, subgranulate, with shorter, inconspicuous pubescence; first antennal segment constricted at apical three-fourths so that basal half and distal fourth are thicker; Mexico *nevermanni* new species.

Rhinosceps dybasi *ocularis* new variety

The type male *dybasi* has rudimentary eyes of only eight facets each (Park 1942, p. 88) . The new variety, *ocularis*, has eyes of twenty-two facets each.

The variety is based on three specimens as follows.

One male at light at night, April 7, 1932, Tuxtepec, Oaxaca, 50 meters, on the Papaloapam river. A. Dampf.

One female at light at night, June 7, 1937, Loma Bonita, Oaxaca, 100 meters, A. Dampf. The locality is on the Isthmian railroad, in rolling, open country with alternating grassland and bush, mostly cleared for pineapple cultivation.

One female at light at night, January 3, 1939, 20 meters, in virgin forest with clearings, near Reforma, Tabasco. A. Dampf.

This gives the species a range of at least 300 miles (500 kilometers) , with a known altitude range from near sea level to 100 meters. The known localities are all in the Atlantic drainage of the Isthmus of Tehuantepec, and the material comes from three states (Veracruz, Oaxaca and Tabasco) . The range, as far as known, conforms very well with the neotropical Petén Province based on the distribution of lizards of the genus *Sceloporus* (Smith, 1940)

The variety *ocularis* diverges from a recent key to the genus (Park, 1945) at couplet 8. The following revision of this couplet brings this key into harmony with the new findings.

- | | | | |
|----|------|---|--------------------------------------|
| 8 | 7) | First antennal segment subcylindrical | |
| | | First antennal segment triangular, with the ventral face strongly produced mesioposteriorly as a broad arcuate-triangular spine | MALE <i>dybasi</i> <i>ocularis</i> . |
| 9 | (8) | Lateral pronotal margins slightly incise d opposite each lateral fovea | <i>pubescens</i> . |
| | | Lateral pronotal margins deeply incise d opposite each lateral fovea | 10 |
| 10 | (9) | Last sternite obliquely divided | MALE falli. |
| | | Last sternite not divided | 11 |
| 11 | (10) | Third tergite with median apical margin bearing a spine or spinoid tubercle | FEMALE falli. |
| | | Third tergite simple | FEMALE <i>dybasi</i> <i>ocularis</i> |

The exact status of *ocularis* is in doubt. The question turns on whether or not a 74 per cent difference in facet number indicates the origin of a new species or a new variety.

There is no direct answer to this question at this time, since this would involve the experimental breeding of a *dybasi* population.

Indirect data are afforded by the comparative morphology of the genus, the known zoögeography, and experimental findings on the genetics of the *Drosophila* eye.

The general anatomy of *dybasi dybasi* is perfectly consistent with that of *dybasi ocularis* save for the patent divergence in eye facet number. Again, the male secondary sexual features, including the spined first antennomere, and the structure and special pubescence of the sixth sternite, are similar; these secondary sexual features are not present in combination, in other species of the genus. For these weighty reasons, a conservative course is indicated, namely, that *ocularis* is a variety of *dybasi*.

If this is the case, then *ocularis* becomes important from a ~~was mapped re-~~cently (Park 1945, Pl. IV), it was found divided into a northern section with rudimentary eyes, and a southern section with relatively large eyes. The former were unknown south of Veracruz; the latter unknown north of Dutch Guiana. The variety *ocularis* extends the range of *dybasi* into Tabasco. Since its eyes are of relatively large size, its occurrence in neotropical Mexico suggests a critical area between the Isthmus of Tehuantepec and possibly the Isthmus of Panama. Collections from this area would be especially welcome. There is also the possibility that the divergence in facet number occurs in the genus as a whole, in which case *ocularis* would be simply an example of this tendency.

Whatever the true situation, certainly those individuals with rudimentary eyes would have different ecological requirements and responses—especially, one would imagine, to light intensity. Since both the rudimentary and large eye occur in the Petén province of Smith, with relatively uniform environment, the genetic question is of interest.

The only relevant information in experimental genetics is chiefly concerned with the facet problem in the fruit-flies of the genus *Drosophila* and allies. As evidence of a systematic research program, this literature is admirable (Dobzhansky, 1937; Harnly, 1940; Luce, 1931; Margolis and Robertson, 1936). It emphasizes the importance of temperature, during embryonic and larval periods, in the size of wing and size and number of ocular facets. This bears out the general belief that organismal pattern is a complex result of interaction between gene pattern, intracellular enzymes, hormones and the ecological influences of environment, such as temperature and food. It further suggests that

***Rhinosceps dybasi ocularis* new variety**

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The variety is based on three specimens as follows.

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One female at light at night, June 7, 1937, Loma Bonita, Oaxaca, 100 meters, A. Dampf. The locality is on the Isthmian railroad, in rolling, open country with alternating grassland and bush, mostly cleared for pineapple cultivation.

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- | | | |
|---------|---|---------------------------------|
| (7) | First antennal segment subcylindrical | 9 |
| | First antennal segment triangular, with the ventral face strongly produced mesioposteriorly as a broad arcuate-triangular spine | MALE <i>dybasi ocularis</i> . |
| 9 (8) | Lateral pronotal margins slightly incised opposite each lateral fovea | pubescens. |
| | Lateral pronotal margins deeply incised opposite each lateral fovea | 10 |
| 10 (9) | Last sternite obliquely divided | MALE falli. |
| | Last sternite not divided | 11 |
| 11 (10) | Third tergite with median apical margin bearing a spine or spinoid tubercle | FEMALE falls. |
| | Third tergite simple | FEMALE <i>dybasi ocularis</i> . |

***Eupsenius grouvellei* Raffray (Pl. IV, 8)**

Described as "*Euprenius*" *grouvellei* (1896, p. 264), simply from Mexico. One male of this species, in the collection being studied, came from the southwestern corner of Jalisco, near Purificación, in semi-tropical vegetation at 480 meters, at light at night, February 19, 1941. Dr. C. Bolivar. At present the single record places the species in the Neotropical Lower Balsan province of Smith (1940). A further value of the record is that it adds a species to the poorly known Pacific Coast fauna (Park 1944, p. 241-242)

***Reichenbachia* (Leach, 1826)**

This large and important genus was represented in the Dampf material by numerous and diversified samples. Study of these has illuminated certain obscure, taxonomic problems and a more general discussion is necessary. Only a portion of the material in this genus is reported upon at this time.

Invariable characters of Reichenbachia. Vertex of head bearing a pair of vertexal foveae between the eyes. Ventral surface of head with a median, longitudinal carina or flat-topped ridge. Antennae eleven-segmented. Maxillary palpi relatively simple, four-segmented, with the first segment minute; second elongate, arcuate, apically inflated; third subtriangular, with a convex external or lateral face, and an angulate internal or mesial face; fourth elongate, oval, with narrowed apical end bearing a palpal cone. Pronotum with a convex, simple disc; three free antebasal foveae, of which the median is smaller than the two laterals. Each elytron with a sutural stria, a discal or dorsal stria, and basal foveae; flank simple, lacking any subhumeral fovea, carina or sulcus. Five visible tergites with at least the first three laterally margined, and with the first bearing a pair of basal discal carinae. Five visible sternites. Legs typically brachysceline, with short trochanters obliquely articulated with the femora, so that each femur is near its respective coxa (Pl. IX, 5). Intermediate coxae contiguous to subcontiguous, the mesosternum either invisible between them, or visible as a very narrow process (Pl. IX, 5). Posterior coxae widely separated or distant. Tarsi three-segmented, with the first segment short in comparison with the next two segments, the last segment bearing a single tarsal claw.

Variation in Mexican Reichenbachia. The structural characters just listed give, collectively, a constant and distinctive habitus. This total impression is almost always a certain guide in the recognition of a member of the genus. This is a fortunate circumstance since, within

these structural limits, the several species populations exhibit a spectacular variability. Unless there is sufficient material available for study, this variability proves confusing. Consequently, a discussion of range of variation of certain salient morphological features is presented.

Probably the most confusing item is the frontal fovea. This fovea may be treated from two viewpoints: its actual variation in the genus and the taxonomic consequences of this variability. Its lability may arise from its relatively insecure anchorage. Thus the more conservative vertexal foveae are always present, and form the attachment surfaces for the arms of the V-shaped supratentorium of the endoskeleton (Park 1942, p. 20) .

The frontal fovea may be wholly absent (Pl. III, 1; IV, 1; VII, 1) . It may be rudimentary, represented by a foveal pit and hence in marked contrast to the vertexal foveae. It may be present as a large nude fovea (Pl. VI, 1) or as a large pubescent fovea (Pl. IV, 2) . It may lie any place on a line between the posterior limits of the antennal acetabulae (Pl. IV, 2) to the middle of the frontoclypeal declivity, far anterior of the antennal insertions (Pl. VII, 13) . It may have its orifice circular to pyriform ; the orifice may be parallel with the vertex (Pl. IV, 2) , to parallel with the steep frontoclypeal declivity (Pl. VII, 13) , in which latter case the orifice is anterior rather than dorsal.

Now if this variation of the frontal fovea were strictly interspecific, it would afford good criteria for separating species groups. Such a view led Raffray (1904) to utilize the presence or absence of the frontal fovea in partially separating the genus into species groups. Stability of this fovea, whether present or absent, has been accepted generally. As recently as 1942, the author used this Raffrayan system for the neotropical fauna. In the last few years I have examined hundreds of specimens of Mexican *Reichenbachia* and find that this frontal fovea may be present or absent in at least one species, that is, this variation is intraspecific.

For example, the frontal fovea is absent in *dampfi obsoleta*, but present in *dampfi dampfi* (Pl. IV, 2). Its absence in *appendiculata*, and in *falsa* has necessitated a group reallocation for each species. Its presence in *diversula* has changed the group position of this species, and may necessitate a new variety being erected. These matters are discussed later, under the species named, but it is clear that if the presence or absence of the frontal fovea varies within a given species population, then the fovea may not be used in group allocation within the genus. It follows that many of Raffray's groups are compromised, and hence *Reichenbachia* must be reorganized without recourse to the frontal fovea.

Such 'a course must come after prolonged study of the genus as a global aggregate, and may not be accomplished in a limited faunal paper

such as the present study. Nevertheless species descriptions should take this variability into account where possible.

Whether specimens represent a new species, new subspecies, or new variety must be decided on data derived from the study of evidence in general. The frontal fovea appears to be too labile to signalize a new species in an otherwise homogeneous population ; in such a population, presence or absence of this fovea denotes extremes in the normal intra-specific variation.

Apparently each case must be analyzed on its own merits. Thus it is possible that the presence or absence of the frontal fovea may be genetically fixed for one species, but highly variable in a related species. On this point there are no data available from controlled breeding experiments in the pselaphids.

A second character which may give increasing trouble is the median basal fovea of each elytron. In *Reichenbachia* it has been assumed generally that species had either two or three foveae at the base of each elytron. The inner fovea is always present, at the origin of the sub-entire sutural stria. The outer fovea is always present, at the origin of the discal stria.

This discal or dorsal stria is always present ; rarely short, usually extending beyond the middle of the elytral length. Where both foveae are present at the base of each elytron the elytra are said to be bifoveate. When a third fovea is present, it is located between the inner and outer fovea, and when this median fovea is present the elytra are said to be trifoveate.

Up to now, within my experience, the bifoveate or trifoveate condition has been species specific. In the present Mexican material on the other hand, *falsa* Raffray must be divided into *falsa falsa* Raffray which is trifoveate, and *falsa pipa* as a new variety which is bifoveate.

These are only two example of the evident scarcity of our information on pselaphids, and how accumulation of knowledge and experience affects classification.

***Reichenbachia pubescens* (Schaufuss)**

Diagnosis. Length 1.4 to 1.6 mm. long by 0.70 to 0.75 mm. wide. Pubescence abundant, appressed and very short (0.02 mm. long). Head with three subequal, pubescent foveae, a pair of vertexal foveae between eyes and the frontal fovea between antennal tubercles ; the vertex simply convex ; frontoclypeal declivity with a prominent transverse carinoid ridge at area of union ; mandibles simple ; antennae as illustrated (Pl. IX, 3) ; ventral surface of head with an unusually broad, low, median, longitudinal, flask-shaped ridge. Pronotum with three antebasal, free foveae ; the two lateral foveae pubescent and circular, the

median nude and punctiform. Elytra trifoveate, the sutural stria entire, the discal stria half elytral length. First tergite with a pair of basal carinae separated by one-third the segmental width and one-sixth the segmental length. Legs simple. Intermediate coxae subcontiguous (Pl. IX, 5). Metasternum medianly gibbous.

The above redescription is based primarily on three females taken at light at night, June 3, 1931, on the shore of the Rio Pilón near Montemorelos, Nuevo Leon, at 430 meters, by A. Dampf.

In addition two females collected in February, 1941, by Dr. C. Bolívar at 960 meters, east of Purificación, at Autlán, Jalisco, probably belong to a Pacific Slope subspecies of *pubescens*. The eventual discovery of the male sex should resolve the question. Thus this species belongs in Group IX, but is known only from females. It was described from Mexico, with no exact locality given, by Schaufuss (1879, p. 16).

The Nuevo Leon record lies in Smith's Austro-oriental Nearctic province; the Jalisco record lies in his Austro-occidental Nearctic province, on the opposite side of the central Mexican Plateau.

***Reichenbachia juxtairrita* new species**

Type. 2.0 mm. long by 0.9 mm. wide, with abdomen and elytra forming an oval, with the widest part at apical four-fifths of the elytra. Reddish-brown, with pubescence rather long (0.03 to 0.05 mm.), flavous and rather sparse.

Head slightly wider than long, with flattened vertex; eyes prominent, coarsely faceted, twice as long as tempora. Three cephalic foveae: a pair of large, lightly pubescent vertexal foveae on a line through eye centers, each in a broad depression; a smaller frontal fovea, also lightly pubescent, in a deep depression between the rather prominent antennal tubercles. Front long, simple, declivous. Clypeus short, joining front in the usual high, transverse-arcuate, carinoid ridge. Labrum large, transverse, with straight apical margin. Mandibles simple. Ventral surface of head with the median longitudinal carinoid ridge unusually narrow. Maxillary palpi as for genus. Antennae as illustrated (Pl. IX, 6), slender, 0.9 mm. long, relatively simple with fifth and sixth segments distinctly longer than those adjacent.

Pronotum slightly wider than long, with a very convex disc, almost gibbous above the median fovea. Trifoveate: a pair of unusually large, deep, pubescent, circular lateral foveae; a median nude fovea much smaller than laterals, but larger than usual, about the diameter of one of the coarse ocular facets.

Each elytron bifoveate, the foveae distinct and nude ; sutural stria entire ; discal stria arcuate and long, reaching to apical seven-ninths of elytral length.

Abdomen with narrow, strong margins. Five visible tergites in a median length ratio of 4/2.5/2/2/1.5 with last two invisible from above. First with a pair of straight, strongly divergent basal carinae which are one-third the segmental length ; at carinae bases they are separated by only one-fifth total segmental width, but at carinal apices they are separated by one-third the total segmental width.

Five sternites in a median length ratio of 3.5/.6/.3/.3/1 with the short last sternite convex, more punctulate and more hirsute, with a small depression in median basal third.

Legs simple. Metasternum medianly longitudinally depressed between tumid borders, the depression broadening posteriorly.

Described on one specimen, of doubtful sex, collected by Cesar Ocampo at light at night, June 21, 1938, in virgin forest near Reforma, Tabasco.

If additional specimens are found, direct dissection will determine the sex. The metasternum is masculine, the last sternite feminine, and the antennae might be either sex. This species is a member of Group XX on described anatomy, but if the antennae are considered sufficiently "abnormal" to place it in other groups, it is equally novel in so far as our present information extends. Much work must be done on discovering both sexes of species in this genus. In the twentieth group it is distinct from *estebanensis* on antennae in both sexes ; from *luteola* on antennae in the female, the only sex known ; from *irrita* on antennae and discal elytral stria in the male, the only sex known.

On the single locality record, the species appears to belong to the Neotropical Petén province of Smith (1940).

***Reichenbachia vinusqua* new species**

Type. 1.4 mm. long by 0.7 mm. wide. Reddish brown, shining, inconspicuously punctulate ; pubescence conspicuous, flavous, semi-erect, moderately long (0.03 to 0.05 mm. long).

Head with prominent, coarsely faceted eyes, more than three times the temporal length. Three subequal, pubescent, normally placed cephalic foveae, each set in a depression. Mandibles simple. Maxillary palpi as for genus. Ventral surface of head as for *den tisterna*.

Antennae slender, simple, with first two and last three segments larger. Segment I suboblong ; II elongate oval ; III to VIII narrower, subequal in width ; III obconical, as long as second, and longer than fourth, sixth, seventh or eighth ; IV subobconical ; V subovate, as long as second or third ; VI ovate, as long as fourth ; VII ovate, nearly as wide

as long ; VIII subovate, as wide as long ; IX wider, obtrapezoidal, as long as wide ; X larger; obtrapezoidal, as long as wide ; XI nearly as long as preceding three united.

Pronotum normal for genus.

Elytra deeply bifoveate, with entire sutural stria, and discal stria extending through basal half of elytral length.

Five visible tergites with a median length ratio of 3.5/1.4/1.4/1.0/1.0 with first having a pair of strong, slightly divergent basal carinae one-half the segmental length, and separated by almost one-half the segmental width.

Five visible sternites in a median length ratio of 3.0/0.7/0.3/0.4/1.0 with sternites flattened medianly, the fifth with a rounded-triangular depression in basal half, and a row of arcuate, stiff, short, coarse setae outlining the flattened area.

Intermediate coxae contiguous. Metasternum broadly, irregularly concave.

Anterior and posterior legs simple. Middle legs with each trochanter bearing a truncated, laminoid process at center of posterior face, and each tibia with a slender, acute apical spine.

Described on a single male at light at night, November 17, 1932, at sea level, near Suchiate, Chiapas, in a swampy region subject to inundation. A Dampf.

This species is a member of Group XXI. Its closest ally is *parviceps* (Sharp) described (1887, p. 25) from Mexico, Guatemala and Panama. It may be separated from this latter species by the male antennae. Thus *parviceps* has the fifth and sixth segments of the male antenna elongated ; the new species has segments **II**, **III** and V subequally long, and IV and VI not elongated.

Reichenbachia vinusqua is a member of the Pacific Slope fauna, and the single record places it in the Neotropical Tapachulan province of Smith (1940).

***Reichenbachia sarcinaria* (Schaufuss)**

Diagnosis. Length 1.75 to 2.3 mm. by 0.75 to 0.9 mm. wide. Pubescence abundant, inconspicuous, rather short (0.02 to 0.05 mm. long) . Head with three subequal, pubescent foveae : a pair of vertexal foveae on a line through posterior third of eyes, and a frontal fovea in a depression between antennal tubercles. Vertex simply convex. Frontoclypeal area rather steeply concavodeclivous. Mandibles each with an external tooth which joins the mandibular ramus in an 'obtuse angle' (Pl. II, 6) . Antennae very abnormal, with fifth segment very large, oviform, glabrous, its ventral face with a subcircular to ovate, poorly defined fovea which is margined excentrically at basal and apical end

by a pubescent, subdentate process (Pl. II, 9, 10). Ventral surface of head with a narrow, median, longitudinal carinoid ridge. Pronotum with three free, antebasal foveae : a pair of rather small, pubescent laterals, and a much smaller, nude median fovea. Elytra trifoveate, with entire sutural stria, and a long discal, arcuate stria which extends to apical three-fourths of elytral length. First tergite with the basal carinae straight, slightly divergent, two-fifths segmental length and separated by slightly more than one-third segmental width. Sternites medianly flattened to form an elongate-oval depression, the last sternite especially longitudinally depressed. Legs with middle trochanter armed with a strong, arcuate spine at ventromesial face (Pl. II, 8), and middle tibia with prominent, pubescent, spinoid process at apical six-sevenths, otherwise simple (Pl. II, 7).

This redescription is based on four males, all taken at light at night, near Tuxtepec, Oaxaca, between May 18 and May 20, 1932 by Dr. Dampf. One on a banana plantation, Sebastopol, along the Rio Papaloapam ; two on a banana plantation, Esmalta, on the same river ; one at Paso Canua on the Rio Papaloapam.

This species is a member of Group XL. **It** was described by Schaufuss (1887, p. 127) as *Bryaxis*, from Yucatan ; the antennae figured by Raffray (1904, p. 171), and the species keyed out by Park (1942, p. 142). Our definite locality record places the species in the Neotropical Veracruzian province of Smith (1940) ; if the type locality is really in Yucatan, as now politically restricted, then *sarcinaria* would have a long range, probably the neotropical Atlantic drainage from Veracruz through the Yucatan Peninsula. On the other hand, the writer (1942, p. 142) was unable to place *Reichenbachia intacta* (Sharp), also of Group XL, and the description of this species (1887, p. 28) fits the diagnosis just given for *sarcinaria*, in so far as Sharp's inadequate description goes. Raffray (1890, p. 311) was similarly unable to place Sharp's species. **I** am beginning to suspect that *sarcinaria* (Schaufuss) of Yucatan, and *intacta* (Sharp) of Guatemala refer to the same species. This can be resolved by direct study of the two types—a course not possible at present. If both refer to one species, then a nice question of priority results, since *intacta* was "published" February, 1887. Again, if these descriptions refer to one species, then the range would be extended southward to Guatemala.

***Reichenbachia netteli* new species**

Type. 1.7 mm. long by 0.7 mm. wide. Dark reddish brown with darker abdomen. Integument shining, the head and pronotum distinctly, sparsely, shallowly punctulate ; elytra and abdomen indistinctly

punctulate. Pubescence flavous, abundant, appressed, rather short (0.02 to 0.03 mm. long).

Head with the eyes prominent, coarsely faceted, but rather small for the genus, only one-third longer than tempora. Vertex simply convex. Three pubescent foveae : a pair of vertexal foveae on a line through eye centers, each in a deep but narrow depression ; frontal fovea subequal in size, but in a broader depression, which is open anteriorly, between antennal tubercles. Front steeply declivous. Mandibles each with a prominent, acute, anteriorly directed, external tooth which joins ramus at nearly a right angle. Maxillary palpi normal. Ventral surface of head with a narrow median, longitudinal ridge.

Antennae abnormal : segment I oblong ; II smaller, subovate ; III smaller, briefly obconical ; IV dorsally transverse-moniliform but with ventral face angulate ; V and VI suddenly larger than adjacent segments (Pl. VII, 15) . V nearly one-fourth longer and wider than sixth, one-fourth longer than wide, longitudinally obtrapezoidal, with a large, irregularly circular, heavily pubescent fovea which occupies apical two-thirds of ventral face. VT about as long as wide, subpyriform with a tumid dorsal face, and the ventral' face wholly, but shallowly foveate, this foveoid face granulated. VII quadrate, half as long and one-third as wide as sixth ; VIII smallest, subquadrate. Next three segments forming a slender club : IX obtrapezoidal, slightly wider and longer than seventh ; X larger, quadrate-trapezoidal ; XI rather blunt apically, not quite as long as preceding three segments united.

Pronotum with lateral foveae pubescent and circular, but each set in oblique ovate depressions; median fovea small, nude, set in a longitudinally ovate depression,

Elytra trifoveate, the three nude foveae of each elytron being unusually large for the genus. Sutural stria entire. Discal stria long, extending nearly to apical eight-ninths of elytral length, deeply impressed, arcuate toward suture nearly to end, where it suddenly curves toward lateral margin.

Five visible tergites in median length ratio of 4.5/2.2/1.5/2/1 with first having the basal carinae subparallel, slightly less than one-third segmental length and separated by slightly more than one-fourth segmental width.

Five sternites in median length ratio of 2.5/0.8/0.2/0.3/2.6 with fourth slightly medianly produced, and fifth flattened and apically produced.

Anterior and posterior legs simple. Middle legs modified : the femur slightly swollen, with ventral face ovate-foveoid for median third ; tibia rather thick for its length, thicker in apical half, with apex bearing

a laminoid spine of unusual length (half the longest face of trochanter), with its apex beveled.

Intermediate coxae subcontiguous. Metasternum very broadly concave.

This distinctive species, named for Dr. R. Nettel, is based on one male collected at light at night, July 29, 1932, at 2240 meters near San Jacinto, Mexico, D. F., by A. Dampf. It is a member of Group XLI, and on the basis of the single record would appear to belong in one of Smith's Nearctic Austral provinces. Its nearest group allies are the Colombian *biclavata* (Reitter, 1882) and the Guatemalan *diversi cornis* (Sharp, 1887). From the former it is separated quickly by the bispinulose fifth antennomere and basal abdominal carinae separated by more than one-third the width of the first tergite. From the latter, it is separated by the elytra. Thus Sharp (1887, p. 28) states that his species lacks all trace of discal striae. This is probably incorrect in that these striae are very short and were overlooked.

The combination of toothed mandibular rami, antennal abnormalities, unusually large elytral foveae, very long and everted discal elytral striae and middle leg modifications serve to isolate *netteli*.

***Reichenbachia dentisterna* new species**

Type. 1.6 mm. long by 0.8 mm. wide. Reddish brown, integument shining, with head and pronotum distinctly, sparsely, shallowly punctate and elytra and abdomen indistinctly punctulate. Pubescence inclined and longer than in *netteli*, the setae 0.03 to 0.06 mm. in length.

Head with large, coarsely faceted eyes nearly three times the length of tempora. Vertex simply convex. Head with three, very slightly pubescent, rather small foveae which are normally placed, and each in a depression; median frontal fovea smaller and shallower. Mandibles simple, not externally toothed. Palpi normal. Ventral surface of head with the median longitudinal ridge in the form of a flat-topped, narrow, oblong platform.

Antennae abnormal. Segment I conicoelongate; II subquadrate; III much smaller, briefly obconical; IV submoniliform; next three abnormal (Pl. VII, 16). V longer than wide, dorsal face longitudinally obtrianangular, apically almost three times as wide as sixth; both dorsal and ventral faces tumid, with a circular subgranular and flattened area at apicomesial face. VI elongate-cylindrical, three times longer than wide, nearly as long as fifth. VII as wide as sixth and elongate-cylindrical, twice longer than wide. VIII subobconical, half as long as seventh, slightly larger than third or fourth; the next three forming a slender club. IX and X similar, obtrapezoidal, tenth larger; XI apically blunted, as long as preceding two united.

Pronotum with two large, circular, pubescent laterals, and a small, nude, subovate median fovea.

Elytra bifoveate, with entire sutural stria, and long discal stria extending to apical seven-ninths.

Five' visible tergites in a median length ratio of 4/2/1.8/1.5/0.8 with first having very short basal carinae, one-fourth segmental length, and widely separated by almost one-half the segmental width.

Five sternites in median length ratio of 3/0.4/0.2/0.2/1.4 with last medianly depressed in basal half.

Legs simple save for middle coxae, each of which has the mesioventral angle armed with a short, pubescent cusp.

Middle coxae subcontiguous. Metasternum broadly concave, with a short, distinctive, longitudinally carinoid tubercle at center of concavity.

Based on two males, taken at light at night, near Tuxtepec, Oaxaca by A. Dampf. The type at 50 meters, along the Papaloapam river on February 13, 1932. The paratype at a banana plantation, Sebastopol, on the same river, May 18, 1932. The species is a member of Group XLI, and the single locality places it in Smith's Veracruzian province. The metasternal tubercle combined with "the antennal modifications and short, distant abdominal carinae form a distinctive pattern, not closely related to other members of groups XL and XLI.

Before discussing another group of Mexican species, it should be pointed out that both *netтели* and *dentisterna* are in agreement with some, and in disagreement with other diagnostic characters of *sallaei* (Sharp) . This last species was inadequately described (1887, p. 27, Pl. I, fig. 13) from Mexico, Guatemala and Panama. Thus *sallaei* is stated to have a very fine discal elytral stria which extends for about half elytral length, and figured as having no discal stria. If this is so, then the two new species may not be confused with *sallaei*. On the other hand Sharp's species was to be expected in the present collection, and was tentatively discriminated. In Sharp's description and figure the basal abdominal carinae are very short and distant in *sallaei*. This is remote from the condition in *netтели*, and similar to *dentisterna*. In Sharp's figure of *sallaei* the intermediate femora appear to be swollen. This is not the condition in *dentisterna*, but could be similar to the abnormal mesofemora of *netтели*. For these and similar reasons_ Sharp's species can not be placed. In fact, my present inability to examine Sharp's type specimens has postponed a monographic treatment of the neotropical fauna ; this examination is planned for the earliest time possible.

***Reichenbachia serapha* new species**

Diagnosis of Female. 1.8 mm. long by 0.74 mm. wide. Reddish brown, shining, inconspicuously punctulate, pubescence inconspicuous and short (0.02 to 0.03 mm. long).

Head with prominent, coarsely faceted eyes, one-third longer than tempora ; three large, pubescent, subequal foveae normally placed ; vertex simply convex ; mandibles simple ; ventral surface of head with rather broad, low, median, oblong platform.

Antennae with segment I subquadrate ; II slightly smaller, with dorsal face subovate, ventral face posteriorly produced so that the mesial outline is distinctly asymmetrical ; III to VIII narrow, of subequal width ; III elongate, obconical, as long as second ; IV quadrate, half as long as third ; V subovate, longer than fourth but shorter than third ; VI elongate, cylindrical, as long as third and fourth united.; VII elongate, cylindrical, as long as third ; VIII as long as wide, square ; IX longer than wide, obtrapezoidal, larger ; X larger than ninth, as wide as long, obtrapezoidal ; XI as long as preceding three united, basally truncate, apically subacute.

Pronotum with the lateral foveae circular and pubescent ; the median fovea nude, minute and punctiform.

Elytra trifoveate, with entire sutural stria, and discal stria half the elytral length.

Five visible tergites in median length ratio 3.5/2/1.5/1/1.5 with basal abdominal carinae of first segment straight, parallel, one-sixth segmental length and separated by one-third segmental width, the space, between them flattened.

Five visible sternites in median length ratio 3/0.5/0.3/0.2/1

Legs simple. Middle coxae subcontiguous. Metasternum with the tumid median area flattened to slightly concave.

Described on one specimen, the type. This female collected at 250 meters altitude, November 23, 1932 at light at night in relatively open country near Xulé brook, Retalhuleu, 'Guatemala. A. Dampf.

This locality is about 25 miles inland from the Pacific Ocean, some 35 miles from the border of Chiapas. Consequently this species is also a member of the Pacific Slope fauna, and is in the southeast extension of• Smith's Tapachulan province.

The taxonomic position of the species is obscure. It may prove to be the female of some previously described species based on the male sex but its peculiar combination of features is so far undescribed. It fits the description of Sharp's *sallaei* (1887, p. 27) save that Sharp states that the female of *sallaei* has antennal segment V longer than VI. Similarly, the trifoveate elytra, short elytral stria, and short basal abdominal

carinae are Group IX characteristics. This group is known only from the female sex: *pubescens* (Schaufuss) has antennal segment V longer than VII, and VI three times as long as wide ; *boliviensis* Raff ray has V distinctly longer than IV or VI ; *grouvellei* Raffray has III to VI twice as long as wide.

***Reichenbachia sallaei* (Sharp)**

Diagnosis of Male. 1.7 to 1.9 mm. long by 0.67 to 0.75 mm. wide. Shining dark reddish brown when mature, lightly punctulate ; pubescence rather sparse, flavous, moderately long (0.02 to 0.03 mm.). Head with prominent eyes subequal to temporal length. Three small, very lightly pubescent cephalic foveae, subequal in size, normally placed, the vertexal pair in relatively small and deep depressions, the frontal in a relatively broad depression between antennal tubercles. Vertex evenly convex. Mandibles each with a broad, prominent external tooth (Pl. II, 3) ; left mandible with two large internal teeth and right mandible with two small anterior and one large posterior tooth. Ventral surface of head with narrow, median, longitudinal carinoid ridge.

Antennae abnormal, as illustrated (Pl. 1, 2; VII, 14). The fifth and sixth segment reminiscent of Group XLI ; the ventral face of V with a broad, shallow, glabrous, excentric fovea in apicomerial half, not toothed but with the mesial edge of the fovea laminoid. Ventral face of the smaller, transverse VI wholly flattened, the surface studded with from 16 to 28 heavy denticles, each denticle bearing a short, thick, translucent setal plume.

Pronotum normal for genus. Elytra deeply, obviously trifovent, with entire suturalstria; the discal stria deep for basal half of elytral length, and more inconspicuous to apical three-fourths (so that the stria appears half as long as elytra on superficial study).

Basal carinae of first visible tergite separated by slightly less than one-third segmental width, and in reality one-fourth as long as segment. (however, when body is contracted these striae are quite inconspicuous, and to the casual glance measure only one-sixth the segmental length).

Metasternum broadly concave and posteriorly declivous between strongly elevated lateral tumidities, the apical margin concave and in relaxed specimens the usually invisible true first sternite can be observed as a melanized intercoxal piece. Intermediate coxae subcontiguous.

Anterior legs simple. Middle legs with prominent spine near apex of tibia. Posterior legs with tibiae peculiarly modified : the apical two-sevenths of the external face (Pl. II, 4, 5) is suddenly concave, this glabrous concavity surrounded by the normal tibial pubescence.

Diagnosis of Female. As for male save that the mandibles are not externally toothed ; antennae with slender, relatively simple segments,

of which V and VI are distinctly longer than the adjacent segments, the fifth slightly longer than sixth ; legs simple ; metasternum medianly elevated with the area slightly, longitudinally depressed.

Diagnosed on seven males and two females as follows.

One male at light at night, November 6, 1931, in virgin forest near a coffee plantation, Maravillas, Chiapas, at 660 meters on the Sierra Madre de Sur. Jose Parra.

Two males at village light, November 12, 1932, Mazatán, Chiapas. A. Dampf.

Two males and two females at light at night in village and in swampy bush adjacent, November 17, 1932, Suchiate, Chiapas, at sea level near the Chiapas-Guatemala border. A. Dampf.

Two males at light at night, November 23, 1932 in tropical vegetation at 250 meters, Retalhuleu, Guatemala. A. Dampf.

Sharp (1887, p. 27, Pl. I, fig. 13) described *sallaei* from a series of specimens from Cordoba, Veracruz (Mexico) ; Cerro Zunil at 4000 to 5000 feet, and Senahu (Guatemala) ; and Volcan de Chiriqui at 2000 to 3000 feet (Panama) .

If my diagnosis is correct *sallaei* has a long range, from central Veracruz to northern Panama, and on both sides of Mexico, with a known altitude range of from sea level in Chiapas to 5000 feet in Guatemala. Such a range would be within the Neotropical Region but would include biotic provinces on both the Atlantic and Pacific sides of Mexico. I find the Cordoba record the most inconsistent ; all of the Dampf material lies within the Pacific coastal area, from sea level to 660 meters, chiefly in Smith's Tapachulan province and its Guatemalan extension, southwest of the Chiapan Plateau.

The inadequate description and figure of *sallaei* fits my material very closely : the elytral discal stria and basal abdominal carinae as discussed by Sharp can be harmonized with the specimens at hand, as stated previously. If this is done, then three serious discrepancies remain : the externally toothed mandibles, the highly modified posterior tibiae, and the trifoveate elytra. Of these three the first two could be overlooked by Sharp, considering the possible illumination and magnification of his period ; the last objection is more serious since Sharp illustrates

is made, pending direct study of Sharp's type specimens, since the overall congruence is very convincing.

Finally, Raffray (1904) and Park (1942) placed *sallaei* in Group XL, a group with unmodified posterior tibiae. If my diagnosis is correct, *sallaei* must go to Group XLVII.

Reichenbachia guatemalensis Fletcher

This well-described species (1928, p. 214-215, Pl. **XI I**, fig. 6) was based on both sexes, from San Francisco and San Miguel, near Lake Petén, Guatemala, collected by Dr. Dampf near the end of 1925.

The species is a member of Group XLVII and the externally-toothed mandible (Pl. **VIII**, 6) and dilated posterior tibia (Pl. **VIII**, **1**) of the male sex are illustrated.

The sample before me, all from Mexico, consists of nine males and two females.

One male at light, at night, August 4, 1932, Cardel, Veracruz. Inspector **R. Ruiz** Soto.

Three males and two females at light at night, January 1, 1932, Tolosa, Oaxaca. José Parra.

One male **at light at night**, December 13, 1937, San Cristobal, Oaxaca. A. Dampf.

One male at light at night, June 20, 1938, on shore of the Usumacinto river, 20 meters elevation, near Balancán, Tabasco. C. Ocampo.

Two males at light at night, June 21, 1938, 20 meters, virgin forest near Reforma, Tabasco. C. Ocampo.

One male at light at night, January 3, 1939, in clearing near Reforma, Tabasco. A. Dampf.

The original locality combined with the present records gives a distribution for *guatemalensis* which embraces the two adjoining Neotropical provinces (Smith, 1940) surrounding the Bay of Campeche, namely the Veracruzian and Petén ; the species may also be found in the Yucatecan province.

Reichenbachia jaliscoensis new species

Holotype Male. **1.74 x 0.74 mm**. Shining reddish brown, with inconspicuous punctulation and pubescence (0.03 to 0.04 mm. long) .

Head with prominent, coarsely faceted eyes nearly twice the length of tempora. Three subequal, normally placed, slightly pubescent foveae. Vertex simply convex. Mandibles simple (Pl. **VII**, 12) , not externally toothed, but with a basal ledge. Ventral surface of head with the median longitudinal ridge a low, oblong platform. Front simply declivous. Maxillary palpi as for genus.

Antennae relatively simple, segment I suboblong, dorsal face proportions of **II** to **VII** as illustrated (Pl. **VII**, 8) ; **VIII** smallest segment, much smaller than those adjacent, dorsally subquadrate ; club weakly formed of next three, **IX** and **X** obtrapezoidal, ninth with length and

width subequal, tenth transverse, larger ; XI as long as preceding two united, blunted at apex. In lateral view seventh and eighth as in *guatemalensis*.

Pronotum as in *guatemalensis*.

Elytra trifoveate with entire sutural stria ; discal stria three-fourths the elytral length.

Five visible tergites in median length ratio 4/2/1.8/1/1.8 with first bearing a pair of slender basal carinae one-fourth the segmental length and separated by slightly more than one-third the segmental width. Fifth tergite unusual : basal half normally convex and inconspicuously pubescent ; apical half strongly depressed and bearing about twelve posteriorly-directed, silvery setae which are apically recurved and very long (0.09 mm.).

Five sternites in median length ratio 3/0.6/0.4/0.2/1 with fifth normally punctulate-pubescent save for a conspicuous glabrous, slightly raised area at median seventh.

Legs with the anterior tarsal claw deeply bifid (Pl. VII, 10), but tarsal claws of other legs simple (Pl. VII, 11) ; middle coxae each with a strong, elongate spine at mesial angle ; posterior tibiae strongly swollen apically (Pl. VII, 6) but not excavated.

Intermediate coxae very narrowly subcontiguous. Lateral walls of prothorax glabrous, with a longitudinal carina each side from base to center of length. Lateral areas of meso- and metasternal field glabrous ; metasternum medianly pubescent and broadly concave.

Allotype Female. As for holotype save that (1) the antennae are more normal, segments V and VI elongated but less conspicuously than in the male sex, thus V is nearly twice the length of IV, but only slightly longer than VI (Pl. VII, 9), VI and VII are subequal in length but VII is broader, the ventral face of VII is medianly slightly swollen, while VIII, although dorsally subquadrate, has the ventral face medianly angulated. (2) Tergite ratio 4/2.5/1.5/1.5/1 with the first visible from above, second and third subvertical, fourth and fifth ventral in position, the fifth simply punctulate-pubescent. (3) Sternite ratio 3.5/0.5/0.5/0/0.7, that is, the fourth invisible medianly due to the contraction and overhang of the third, with the fifth also nearly invisible. (4) Legs simple (Pl. VII, 7, 11).

Described on one male and thirteen females, February 19, 1941, from Purificación, Jalisco and one male at Autlán, Jalisco. Both of these records are in the southwestern corner of Jalisco, the first at 480 meters, the second at 960 meters. Dr. C. Bolívar.

The known range is Pacific Slope, probably transitional semitropical vegetation from Smith's Lower Balsan into the Austro-occidental

The thirteen females (allotype and twelve paratypes) were compared with respect to possible variability in length of antennal segments. In all specimens, using an ocular micrometer, segment V was two-tenths longer than VI, and VI was usually slightly longer than VII to subequal. This is mentioned to attest the stability of ratio between the fifth and sixth segments.

The species is a member of Group XLVII. In this group it is alone in having the male with simple mandibles. Its nearest ally is *guatemalaensis*, with which it is closely related. The males of both species have the posterior tibiae posteriorly inflated but unexcavated.

***Reichenbachia latipes* Fletcher**

This species belongs in Group XLVII. The male sex is strongly marked : mandibles externally toothed (Pl. VIII, 7) ; middle femora normally shaped, and larger than other femora (Pl. VIII, 4) ; posterior tibiae medianly abnormally dilated, with the dilation bearing an excavation on external (lateral) face (Pl. VIII, 3) .

It was described (1928, p. 212-214, Pl. XI I, fig. 9, 29) from Veracruz, Veracruz, Mexico from a collection at light at night by Dr. Dampf, December 19, 1926.

The collection at hand yielded eleven males and three females taken in Mexico, at light at night, as follows.

One male June 18, 1928 near Villahermosa, Tabasco. A. Dampf.

Two males June 21, 1938 in virgin forest at 20 meters elevation, near Reforma, Tabasco. Cesar Ocampo.

One male December 31, 1938 near Pocvicuc, Tabasco, at about 30 meters, near Usumacinto river. A. Dampf.

Three males January 1, 1939 at same place as above, Pocvicuc, Tabasco. A. Dampf.

One male and one female January 2, 1939, near shore of Usumacinto, near Balancán, Tabasco. A. Dampf.

One male January 6, 1939 at Tirandero, Tabasco. A. Dampf.

Two males and two females January 23, 1939, sea level, at Ciudad Carmen, Campeche. A. Dampf.

This adequate series, collected at night, included captures in virgin forest, forest clearings, grassland, and village gardens between sea level and 30 meters altitude. The species is a member of the Atlantic Slope fauna, occupying the adjacent biotic provinces Veracruzian and Petén.

***Reichenbachia quotuma* new species**

Type Male. 2.0 mm. long by 0.74 mm. wide. Heavy-bodied, shining reddish brown, with punctulation gradually becoming more evident from head to abdomen; the pubescence brown, inconspicuous, yet rather abundant (0.02 to 0.03 mm. long).

Head with coarsely faceted eyes one-third longer than the rather square tempora. Three large, pubescent, normally placed cephalic foveae. Vertex simply convex. Front simply declivous. Mandibles each with an acute external tooth which meets the ramus at an acute angle (Pl. VIII, 7). Ventral surface of head with the median longitudinal ridge unusually narrow. Palpi as for genus.

Antennae abnormal. Segment I suboblong; II much shorter, longer than wide, nearly as wide as first; III shorter than second, slender obconical; IV shorter, as wide as long; V ovate, nearly as long as preceding two united, wider; VI as wide and of same shape, slightly shorter; VII slightly shorter than sixth, longer than wide, asymmetrical with mesial face sharply oblique in apical half; VIII about the size of fourth, asymmetrical, with mesial face very oblique to give a right-triangular profile; IX and X slightly longer than wide, very slightly obtrapezoidal; XI nearly as long as preceding three united, not much tapered, apically blunt. The last three segments form a strong, heavily pubescent, subasperate club. The eighth segment rests against the mesial obliquity of the seventh, and the ninth against the mesial obliquity of the eighth, so that the club is oblique to give a subgeniculate appearance to the antennae.

Pronotum normal for genus. Elytra deeply trifoveate, with deep and entire sutural stria; discal stria extending to apical five-sixths of elytral length.

Tergites in median length ratio of 4.5/2.8/2.5/2.5/1.3 with first having the basal carinae one-fourth the segmental length and separated by less than one-third the segmental width. Last transverse, trapezoidal, with slightly concave apical margin.

The five visible sternites all involved in a deep, longitudinal, conspicuous depression of the median area.

Metasternum very deeply concave between strongly tuberculate walls.

Middle legs very abnormal. Coxae each with a broad, blunt triangular spine at mesial half. Femora shorter than other femora, heavy, arcuate dorsoventrally, greatly swollen (each twice the dorsoventral height and twice the lateromesial width of other femora), ventral face medianly excavated, anterior face with a blunt, prominent, conical tubercle which projects in front of distal fourth of excavation (Pl. VIII,

5) . Tibiae each with a strong spine at apical three-fourths, the tibiae shorter than other tibiae, heavy and arcuate.

Posterior tibiae elongate, abnormally dilated at apical three-fourths in the dorsoventral diameter, distal third of tibiae obliquely swollen lateromesially with an oval excavation in the oblique top of this . oblique surface (Pl. VIII, 2).

Described on six males Type and four paratypes at light at night, January 23, 1939, at sea level, near Ciudad Carmen, Campeche, between groves of coconut palms. A. Dampf.

One male paratype at light at night, June 21, 1938, virgin forest near Reforma, Tabasco, at 20 meters altitude. Cesar Ocampo.

This species is a member of Group XLVII, belongs to the Atlantic Slope fauna, and so far is known only from Smith's Petén province.

It can be easily discriminated from other neotropical members of its group : from *sallaei* by the antennae and peculiar apical excavation of the posterior tibiae ; from *jaliscoensis* by this species' lack of external madibular teeth and by the dilated posterior tibiae not excavated; from *guatemalensis* by the latter's simple intermediate femora; and from *latipes* by the latter having the posterior tibiae dilated in median third of length.

***Reichenbachia diversula* Raffray**

Male. 1.5 to 1.6 mm. long by 0.7 to 0.74 mm. wide. A small species, rather slender with head tapering anteriorly and abdomen tapering posteriorly. Light yellowish brown when newly pupated to dark reddish brown when mature, shining, with punctulation becoming increasingly evident posteriorly ; pubescence short and inconspicuous.

Head (**Pl. VII, 13**) with prominent, coarsely faceted eyes nearly twice the temporal length. Vertex strongly convex, with the front long, simple, very gradually declivous. Cephalic foveae very large (twice the diameter of an ocular facet) , all three subequal in size and pubescent. Vertexal foveae on a line through eye centers; the frontal fovea wholly on the declivous front, with its orifice opened anteriorly, at nearly right angles to orifices of vertexal foveae. Each mandible with an acute external tooth, directed obliquely ventrally, and meeting the ramus at an acute angle. Maxillary palpi with: fourth segment more slender than usual in genus. Ventral surface of head with median ridge very low, inconspicuous, narrower basally.

Antennae . abnormal (Pl. VII, 13). Segments V and VI distinctly longer and wider than IV or VII ; slightly 'asymmetrically-ovoidal, with convex dorsal faces, their ventral faces flattened. but not foveate, slightly subasperate-punctate ; VI longer than V. VII subequal in length to

third, slightly longer than wide. VIII shorter, quadrate. IX larger, slightly longer than wide. X much larger than ninth. XI rather slender, as long as preceding three united.

Pronotum with lateral foveae smaller than usual in genus, each circular, pubescent, as large as vertexal foveae ; median nude fovea very minute (0.013 mm. diameter) , one-half the diameter of an ocular facet.

Elytra trifoveate, with entire sutural stria ; discal stria *of variable length*. In the sample before me this stria varied from three-eighths to five-eighths the elytral length.

Basal abdominal carinae straight, slightly divergent, one-third as long as first tergite and separated by slightly more than one-fourth the segmental width.

Intermediate coxae subcontiguous. Metasternum broadly concave medianly.

Middle legs: coxae each with a large, translucent, laminoid spine ; trochanters each with a minute tooth at center of ventral face ; tibiae each with a strong subapical cusp.

Female. Similar save in the following particulars.

(1) Antennae abnormal. Segments III to VII longer than wide subequal in width ; III obconical, twice as long as wide ; IV slightly longer than wide, much shorter than third, subobconical ; V cylindrical, as long and as wide as third ; VI cylindrical, one-third longer than fifth ; VII slightly longer than fourth.

(2) Metasternum medianly elevated and flattened.

(3) Legs simple.

This diagnosis is based on seven males and three females, taken at light at night, all in the state of Oaxaca, as follows.

One male February 20, 1932 at 610 meters, near Cuicatlán. A. Dampf.

One male and three females May 19, 1932 at Paso Canua on the Papaloapam river, near Tuxtepec. A. Dampf.

Two males May 18, 1932 at a banana plantation, Sebastopol, on the same river, near Tuxtepec. A. Dampf.

Three males December 15, 1937 at Rancho Monter, on the shore of the Rio Cajones, at about 150 meters. A. Dampf.

These records place the species on the Atlantic drainage or northern side of Oaxaca. The species is probably a member of Smith's Veracruzian province, with the more southern records at relatively low elevations, in the valleys of rivers penetrating the higher Nearctic Guerreran province.

This is one of the more satisfactory allocations of the present study, as the following resumé will show. David Sharp described this species

as *Bryaxis diversa* (1887, p. 29-30, Pl. I, fig. 14) from seven specimens taken at San Feliz and Tolé, Panama along the sandy banks of streams.

Sharp's name was preoccupied, by two months, by *Bryaxis diversa* Raffray, January, 1887, from Cape Town, South Africa. Consequently Raffray (1904, p. 363) renamed Sharp's species *diversula*.

However Raffray (1904) placed *diversula* in Group LVI, a group in which the frontal fovea is completely absent. Sharp both stated and figured the frontal fovea as present but abnormally, placed on the declivous front, which would put the species in Group LII. Park (1942, p. 150-151) reviewed this problem, and being unacquainted with this species, followed Raffray's group designation, but with expressed doubt as to its accuracy.

The present Mexican sample has the frontal fovea present, just as Sharp stated (Pl. VII, 13;) , so that the species must be reassigned to Group LII.

Reichenbachia guerrensis new species

Holotype Male. 1.54 mm. long x 0.53 mm. wide. This is a small, slender species with the aspect of *diversula* Raffray and *oberthüri* Raffray.

Head as in *diversula* save for the mandibles and antennae as follows.

Mandibles peculiar. Left mandible bearing an acute external tooth, flexed ventrally, joining the ramus in an acute angle ; right mandible (in both holotype and : paratype male) without tooth, as in females, viz. male mandibles asymmetrical in this respect. In this genus some species have an externally toothed mandible, while others have the mandibles simple ; this is the first species known to me in which one mandible bears an external tooth and the other mandible is simple in the male sex.

Antennae abnormal (Pl. IV, 4, 5) with modifications reminiscent of *bidavata* (Reitter) of Colombia, *oberthüri* Raffray of Colombia, and *sallaei* (Sharp) . The new species has antennae as follows: segment I large and elongate; II much smaller, slightly longer than wide ; III obconical, about as long as wide, much smaller than second ; IV about as long as wide, submoniliform; V one-fourth longer than wide, oviform, dorsal face convex, ventral face with deep and irregular fovea in mesioapical half, wall of this ' fovea erected and folded into a crest at mesioapical angle, this segment four times longer ' and three times wider than fourth segment; VI one-fourth shorter and about one-half narrower than fifth one-third longer than wide, asymmetrically articulated, elongate oval, ventral face flattened and 'bearing in basal

half a sharply delimited, setose, asperate circular area; VII, VIII, IX narrower than sixth, each about as wide as third segment, each longer than wide; VII one-half as long and as wide as sixth; VIII shorter, slightly longer than wide; IX nearly twice as long as wide, subobconical; X much larger, longer than wide, about the size of sixth, elongate trapezoidal; XI slender, as long as two preceding united.

Pronotum as in *diversula*. Elytra bifoveate, with entire sutural stria and a short discal stria which ends abruptly in basal third of elytral length. Basal abdominal carinae one-third the segmental length, and separated by more than one-third but less than one-half the segmental width as in *biclavata*. Middle legs with each coxa bearing a prominent, laminoid spine these coxal spines are very strongly recurved so that they project ventrally (in contrast to those of *diversula* and *oberthüri* in which the spines are straight, and lie flat over the metasternum); middle trochanters each with a slender, elongate, spine at center of ventral face.

Allotype Female. 1.4 mm. long x 0.53 mm. wide. As for male with the following exceptions.

(1) Both mandibles simple.

(2) Antennae abnormal (Pl. IV, 6); segments III to VII subequal in width; III elongate obconical, longer than second; IV cylindrical, longer than wide, shorter than third; V cylindrical, nearly three times longer than wide, about twice as long as fourth; VI cylindrical, slightly longer than seventh; VII cylindrical, slightly longer than fourth (allotype) to subequal (in some paratypes); VIII subquadrate, as wide as seventh.

(3) Legs simple.

(4) Metasternum simply elevated, medianly flattened.

Described on two males and eight females, taken at light at night, in Guerrero.

Three females July 30, 1930 on the Rio Balsas, at 400 meters, near Santo Tomás. Jose Parra.

One female paratype August 4, 1930, also by J. Parra, along the Rio Balsas, at 200 meters, near San Gerónimo.

Two males and four females March 5, 1935, in an arid region at 600 meters, on shore of Rio Cocula (a clear brook over gravel), near the town of Cocula. A. Dampf.

This species is a member of Group LII, and can be separated rapidly from the other neotropical members of the group by its bifoveate elytra. It is a member of the Pacific Slope fauna.

***Reichenbachia reichei* (Schaufuss)**

This species was briefly described by Schaufuss (1872 p. 364-365) on the male sex, as a *Bryaxis* placed in Group LIII of *Reichenbachia* by Raffray (1904) ; the male sex redescribed and the remarkably abnormal antenna illustrated by Park (1944, p. 240-241, Pl. II, fig. 8) .

Material thus far examined in the Dampf collection has yielded additional specimens, of both sexes, so that a few words may be said regarding variation in the male anatomy, and the female sex described.

Two items require amplification. In the first place the unique antennal modifications, affecting segments V to XI inclusive, although always presenting the same qualitative abnormalities, vary in their quantitative expression for each segment. For example, the sixth segment is always strongly convex dorsally and deeply excavated ventrally ' but the amount and shape of the excavation, and the shape of

the segment varies. Thus in eight males measured, the sixth segment

varies from a quadrate dorsal face with rounded corners, to an elongated oval one-fourth longer than wide. Again, the ventral face of the eleventh segment varies in its abnormality from a small, circular and pubescent fovea at basal third, to an irregularly foveoid depression in median third.

Second, the elytral discal stria is subject to considerable variation in both sexes, from a poorly-defined impression one-third the elytral length, to a fine stria one-half the elytral length.

Description of Female. As for male (Park, 1944, p. 240) , with the following exceptions. (1) Head ' with the vertex simply and slightly convex, not strongly ' longitudinally convex from . occiput to clypeus as in male. (2) This flattening is, accompanied by the development of a more normal interantennal line, and consequently the frontal fovea, while far forward, is much less declivous, although its orifice is obliquely open anteriorly (a group characteristic shared with Group LI I) . (3) Antennae very different, much more simple, segment **I elongate** ; II smaller, elongate, suboval ; third to eighth subequal in width, - narrower than second ; **III** obconical, two times longer than wide, as long as second.; IV much shorter, slightly longer than wide, oval; V same shape but slightly longer than fourth; VI twice as long as fourth, one-fourth longer than third. very slightly wider, cylindrical; VII and VIII both subquadrate and subequal, slightly shorter than fourth. **(4)** Legs simple. (5) Metasternum simply *elevated and medianly flattened.

The present sample consists of eight males and three females, taken at light at night as follows.

One male, December -8, 1932, on a sandy plain outside the village of Tonalá, Chiapas at 40 meters altitude. A. -Dampf.

Three males and one female, August 22, 1933 in an arid area, near Huetamo, Michoacán. This locality is in the southern part, bordering Guerrero, near the Rio Balsas. A. Dampf.

One male, September 2, 1937 at 1295 meters altitude, near Cuautla, Morelos. Inspector R. Ruiz Soto.

Two males and one female, same place, September 23, 1937. R. Ruiz Soto.

One male and one female, same place, September 25, 1937. R. Ruiz Soto.

The distribution of *reichei* in Mexico is definitely on the Pacific Slope, from sea level to at least 3600 feet altitude, and from southern Michoacan, through Guerrero (Park, 1944, p. 241-242) , and Morelos, at least to the center of the coast of Chiapas, bordering the Gulf of Tehuantepec. In addition, the species Was originally described from Colombia and Guatemala (Schaufuss, 1872) , and from Guatemala again by Sharp (1887) . Throughout its long range it appears to be purely neotropical. In Mexico the bulk of the records (Michoacán, Guerrero and Morelos) are in the Lower Balsan province, and the record from Chiapas is in the Tapachulan province. The only gap in this pattern is a lack of records from the intermediate Tehuantepecan province along the coast of Oaxaca.

***Reichenbachia celata* (Sharp)**

Diagnosis of Male. 2.0 x 0.9 mm. This is a strong-bodied species with a sharply tapering abdomen ; shining reddish brown, with rather coarse, abundant, flavous pubescence (0.03 to 0.07 mm. long) which is semierect on elytra.

Head wider (through prominent, coarsely faceted eyes) than long (from clypeofrontal ridge to occiput) . Vertex simply flattened, with two very large, deep, pubescent vertexal foveae, each with a diameter of two ocular facets, and much closer to adjacent eye than to each other. Frontal fovea absent. Mandibles not externally toothed, their rami sinuate.

Antennae simple. Segment I elongate ; II ovate, smaller, elongate ; III as long as second, twice as long as wide, obconical ; IV shorter, obconical ; V subobconical, nearly as long as third, slightly longer than fourth ; VI and VII subobconical, subequal, shorter than fourth ; VIII smallest segment, quadrate ; club weak, IX slightly longer than wide, with subparallel sides ; X regularly obtapezoidal, nearly as wide as long ; XI about as long as preceding two united

Pronotum with the large pubescent lateral foveae set in large depressions ; median nude fovea punctiform.

Elytra deeply bifoveate ; discal stria fine, obscured by setae but in reality long, extending to apical three-fourths.

Basal abdominal carinae nearly one-half the segmental length and separated by nearly one-half the segmental width. Fifth tergite tapering rapidly to an acute apex. Fifth sternite apically lobed, to coadapt with the conicoid last tergite, the central portion of the segment deeply, circularly impressed for almost its full length, medianly longer than preceding three sternites united.

Diagnosis of Female. As for male save for the following differences.

(1) Abdomen not acutely tapered, normally narrowing to a rounded apex; fifth tergite coarsely punctate, strongly convex, with broadly concave apical margin ; fifth sternite simply convex, with broadly convex apical margin, short, not as long as preceding two sternites united. (2) Metasternum simply elevated medianly instead of slightly concave. (3) Antennae more slender with a much smaller club, segment III to VIII as in male save that actual length and width of segments slightly shorter, that is, III longest, V nearly as long, IV next longest, VI and VII slightly shorter, subequal ; VIII shortest, quadrate. (4) Middle trochanters not toothed.

Diagnosed on five males and four females, collected at light at night as follows.

One male, January 1, 1939 at sea level, in groves of coconut palms, near Ciudad Carmen, Campeche. A. Dampf.

One female, June 21, 1938 near Reforma, Tabasco in virgin forest at 20 meters elevation. Cesar Ocampo.

One male and one female, 'July, 1938 on shore of Rio Usumacinto, at 25 meters elevation, near Pocvicuc, Tabasco. Cesar Ocampo.

One male, February 29, 1932 near Yagalaxi, Oaxaca at 1000 meters elevation at least, in a mountainous region called Sierra de Juarez. A. Dampf.

One female, December 15, 1937 at 150 meters, near Rancho Monter, on the Rio Cajones, Oaxaca. A. Dampf.

Two males 'and One female, July 3, 1932 at between 200 and 500 meters, near Monte Alto, Veracruz, bordering on Oaxaca. A. Dampf.

This species belongs in Group LIV. It was described from Jalapa, Veracruz ; Guatemala City, Guatemala; and Managua, Nicaragua, by David Sharp (1887, p. 25) . The original Mexican record and the rather satisfactory additions from the large Dampf collection give the species a definite Atlantic Slope range, from sea level to about 3000 feet altitude, within the contiguous Neotropical biotic provinces of Petén and the Veracruzian (Smith, 1940)

Reichenbachia celata (Sharp) and *bifoveata* Fletcher are closely allied aggregates in this group. To check the inherent stability of the' ratio

of antennal segments IV to VII, the lengths of these segments were obtained by ocular micrometer for both sexes of the above *celata* sample. The ratio of lengths for five males was: IV (0.82), V (1.02), VI (0.70), VII (0.70), and the females also gave a similar ratio. Therefore, it would appear that Sharp's original statement, that the male *celata* had segment V slightly longer than the adjacent segments, is a reliable criterion for the separation of these two closely allied species, since Fletcher (1928, p. 216) states that his *bifoveata* males (from Veracruz, Veracruz) have segments IV, V and VII about equally long, with VI slightly shorter.

***Reichenbachia bifoveata pacifica* new subspecies**

The species *bifoveata* was described (Fletcher, 1928, p. 216-217) from Veracruz, Veracruz. Subsequently (Park, 1944, p. 239) a female of this species was recorded from Acapulco, Guerrero. Since then *celata* (Sharp) has been studied, as discussed above, and the Acapulco female can now be allocated as a western subspecies of *bifoveata*. This female is quite different from the Veracruzian population in the length of the basal abdominal carinae. These latter are one-half the segmental length in *bifoveata bifoveata*, and in *celata*; in *pacifica* these carinae are very short, one-fifth the segmental length. In addition the pubescence is much less conspicuous and more appressed, and the median basal pronotal fovea is relatively larger. This subspecies is a member of the Neotropical Pacific Coast Lower Balsan fauna. The taxonomy of Group LIV is very obscure as yet. When more material accumulates the several specific and infraspecific categories will repay detailed investigation, especially comparative anatomy of the aedeagus.

***Reichenbachia bicuspidata* new species.**

Type Male. 2.0 mm. long by 0.73 mm. wide. This is a heavy-bodied, shining, coarsely pubescent species. Its strongly tapered, conical abdomen, total lack of a frontal fovea, and bifoveate elytra give the species the general structure of *celata* and *bifoveata*. It differs from these species in its mandibles and antennae.

Each mandible bears a prominent external tooth. This tooth is very large, broadly triangular and conspicuous.

The antennae are simple ; segment I elongate, arcuate, cylindrical ; II elongate, ovoidal, smaller ; III narrower and longer than second, obconical, more than twice as long as wide ; IV to VIII subequal in width to third, and ovoidal, decreasing in length, each slightly shorter

than preceding, the fourth shorter than third, the eighth quadrate, smallest ; club poorly developed, IX oval, as long as fifth but shorter than fourth ; X obtapezoidal, slightly longer than wide, as long as fourth ; XI as long as preceding two united.

Bifoveate elytra with a discal stria two-thirds the elytral length.

Basal abdominal carinae one-third the segmental length, and separated by one-third the segmental width. Last sternite as long as second, concave medianly for its whole length.

Metasternum broadly concave. All tibiae with an apical cusp. Middle trochanters each with a tooth at center of ventral face.

Described on one male, collected by Dr. Dampf between 4:12 and 4:17 P. M., November 19, 1932, in a sweeping net, while traveling by automobile. Since the net was being swept through the air, the beetle must have been flying at the time. The capture was made at sea level, near Puerto de Ocos, Guatemala (just over the border from Chiapas).

The species is a member of Group LIV. The single record places it in the Pacific coastal extension of the Mexican Tapachulan province of Smith (1940).

This interesting species may be separated from its several group allies as follows : *bifoveata* Fletcher has simple mandibles ; *celata* (Sharp) has entirely different antennae ; *immodica* Raffray, *obnubila* Raffray and *stussineri* (Reitter) have each elytron trifoveate.,

***Reichenbachia carinifer* Fletcher**

This species was described (1928, p. 215-216, Pl. XII, fig. 7) from Veracruz, Veracruz, collected by A. Dampf at light at night, December 19, 1926.

I have one male topotype collected by A. Dampf at light at night, November 30, 1926. This is a distinctive species. The unique head and fifth antenna! segment are figured (Pl. IV, 1). It is a member of Group LV, and so far is known only from Smith's Neotropical Veracruzian province.

***Reichenbachia nominata* (Sharp)**

This species was described as *Bryaxis nominata* 1887, p. 26-27) from Dueñas, Guatemala. It was based on the female sex only. In the Dampf collection were females which fitted Sharp's inadequate description perfectly. I have assigned these females to this species. Associated

with the females were males which are in perfect structural agreement, save for a very abnormal epistome and second antennal segment. These masculine abnormalities are undoubtedly secondary sexual characteristics, and consequently both sexes of *nominata* are redescribed.

Diagnosis of Male. 1.6 mm. long by 0.6 mm. wide, shining dark brown, with short inconspicuous pubescence.

Head abnormal (Pl. VII, 1), with prominent coarsely faceted eyes twice the temporal length. Vertex strongly convex from occiput to front (as in *designata*), with a pair of pubescent vertexal foveae. Front abruptly and vertically declivous posterior to antennal articulations. Frontal fovea absent. A pair of yellow, approximate, parallel bundles of setae project anteriorly from the median part of the bottom of the frontal declivity, appearing like a pair of horns. Clypeus subtriangular, with a flat dorsal face which is bisected by a high anteroposterior lamina. Mandibles simple.

Antennae abnormal (Pl. VII, 2, 3). Segment I elongate ; II dorsally elongate and simple, ventral face much longer, acutely produced as a spinoid process which extends apically beneath third segment ; III smaller, obconical ; IV slender, elongate, shorter than third; V elongate, cylindrical, slightly wider than adjacent segments, more than twice longer than wide, twice longer than third ; VI elongate, cylindrical, shorter than fifth but longer than third ; VII shorter, elongate, longer than fourth; VIII as wide but quadrate ; club very slender, simple.

Pronotum normal for genus. Elytra trifoveate; discal stria fine, long, extending to apical five-sixths. Basal abdominal carinae short and inconspicuous, one-fourth the segmental length and separated by one-third the segmental width. Metasternum medianly simply concave. Middle coxae each with a spine at mesial angle. Last sternite simple.

Diagnosis of Female. As for male save that (1) the declivous front lacks the two horn-like bundles of setae. (2) Clypeus at first flattened dorsally from front, then lengthily declivous, lacking the median lamina. (3) Antennae with segment II simple, elongate, cylindrical ; III obconical, almost one-half as long as second ; IV elongate, cylindrical, as long as third ; V slightly wider than adjacent segments, elongate cylindrical, as long as first, about twice as long as wide, about as long as third plus fourth ; VI shorter than fifth, longer than third, elongate, cylindrical ; VII as long as third, slightly longer than wide ; VIII shortest, quadrate. (4) Metasternum elevated and longitudinally convex. (5) Legs simple.

Diagnosed on two males and three females, taken at light at night as follows.

One male and three females, April 27. 1932, near sea level on the Pacific side, near Juchitán, Oaxaca. A. Dampf.

One male, November 2, 1932, at 40 meters, in the Pacific coastal plain, near Tonalá, Chiapas. A. Dampf.

The species is a member of Group LV, and so far is known from the contiguous Neotropical Tehuantepecan and Tapachulan provinces of the Pacific Coast. The species may be quickly separated from *designata* (Sharp) on the antennae: *designata* males have segments V and VI subequal, each as long as II, **III** and IV united; *designata* females have segments V and VI subequal, each as long as VII and **VIII united**.

***Reichenbachia sonorensis* new species**

Holotype Male. As for the male *nominata* save for differences affecting the head and antennae, as follows.

The postantennal line of the front, just before it becomes declivous, is more broadly and deeply arcuate on each side. Hence this vertexo-frontal line juts forward more prominently. This in turn causes the frontal declivity to be concave, rather than vertical. The clypeus is transversely trapezoidal rather than subtriangular, more declivous, and the median anteroposterior lamina is **reduced-to** a carinoid ridge.

The antennae are longer and more slender. Segment I relatively more slender; II actually and relatively longer, the ventral face having a much longer, more prominent apical spine; **III and IV** longer; V and **VI** subequal in length, so that the sixth is relatively and actually much longer; VII **and VIII** subequal, quadrate. These differences are illustrated (Pl. VII, 4, 5).

Allotype Female. As for female *nominata* save for different antennae. The antennae more slender. Segments V and VI subequal in length and width (whereas in *nominata* the fifth segment is one-fourth longer and proportionately wider); VII and VIII subequal, quadrate.

Described on fifty specimens (9 males, 41 females), all from Sonora, as follows.

One male, March 18, 1927, swept from the border of a wheat field at sunset, 35 meters elevation, at Cajeme y Nainari, in the Yaqui Valley. This locality was formerly a cactus-mezquite desert, now irrigated and bearing wheat and rice. A. Dampf.

One male and six females, August 11, 1927, same locality, at light at night, from dusk to midnight; two females from midnight to dawn. A. Dampf. The differential captures suggest that *sonorensis* flies in greater abundance during the first half of the night. This coincides with general information with respect to the strong dusk flight of pselaphids.

Five females, August 13, 1927 at light at night, near an alfalfa field belonging to Rodolfo Calles, in the Yaqui Valley A. Dampf.

Two males and twenty-one females, August 14, 1927, at light before midnight, in the Yaqui Valley, but nearer the Gulf of California, in uncleared desert, covered with the original vegetation. Seven females in the same locality, but taken at the traplights after midnight. This confirms the greater abundance of *sonorensis* flying before midnight; it also suggests a much higher population density of this species in areas relatively free from agricultural activity, but in the same general region. A. Dampf.

Two males, August 15, 1927, at light in a house (the insects entering through the screened windows at night, as they did in Panama and other places), near Nainari. A. Dampf.

Two males, August 16, 1927, at light at night near a field of rice and cotton, near Nainari. The trap lamp was on from 9 P. M. to dawn. During this time, the light trap caught 114,997 insects, of which 10 were pselaphids. A. Dampf.

One male, August 18, 1927, at light at night in a rice field belonging to Alvaro Obregón, Yaqui Valley. A. Dampf.

This series included a number of females which had freshly pupated on August 14, 1927, of the above record in natural desert. It is a Nearctic member of the arid Arizonan province, definitely allied to *nominata* (Sharp) as redescribed in the present paper, but distinct from the latter on parallel differences of secondary sexual characters in both sexes.

***Reichenbachia appendiculata appendiculata* Raffray**

The discrimination of this species has been one of the more difficult taxonomic problems in the Central American fauna.

Raffray (1904, p. 174-175, fig. 70) described *Reichenbachia appendiculata* on the male sex, from Mexico, without further locality citation. The species was described carefully by this expert, and the remarkable abnormalities of the fifth and sixth antennal segments (Pl. III, 1) would have isolated such males under ordinary circumstances. Raffray stated clearly in his description, and in his supplemental remarks, that the declivous front bore a frontal fovea ("*fronte antierius abrupte truncatum, valde declive, fovea frontali transversa, in declivi parte sita*"). On

the basis of this general description, he assigned the species to Group LII. Many years later the author (Park, 1942, p. 149-151, Pl. XVI, fig. 8, 9) described *Reichenbachia strobeckeri* from Barro Colorado Island, Panama Canal Zone. This species, also known from males only, was generally consistent with *appendiculata* save for two important structural features: (1) the clypeus was very abnormal, and (2) the frontal fovea was totally absent. This served to place *strobeckeri* in Group LVI.

The matter rested at this point until the Dampf collection was studied. Material in this collection has served to clarify the position of these

pselaphids. Two- males of *appendiculata* have been found, as follows.

One at light at night, August 4, 1932, at Cardel, Veracruz. This village is on the Atlantic coastal plain, in semitropical vegetation, on the Rio San Francisco. Inspector R. Ruiz Soto.

One at light at night, January 16, 1939, at Ciudad Carmen, Campeche. Taken by A. Dampf near groves of fruit trees in Barrio Guanah.

Study of these two males demonstrated that the clypeus was even more abnormal than in *stroheckeri*, and that, although there was no frontal fovea, the clypeal and frontal structure combined to give the appearance of a median, transverse fovea unless perfect illumination and the requisite magnification were used. Therefore it is assumed that Raffray was mistaken in respect to the presence of the frontal fovea. It follows that *appendiculata* must be assigned to Group LVI, as was suggested earlier (Park, 1942, p. 147). This policy requires a revaluation of *stroheckeri*. Although the differences in the clypeus of the two could be held sufficient to separate them as distinct species. in addition to numerous smaller differences, it is felt that a conservative attitude is desirable. Consequently *stroheckeri* is reduced to a southern subspecies, at least until the male copulatory organs of both can be studied. The signal differences in the clypeus and front are described below, and illustrated.

R. appendiculata appendiculata Raffray.

Atlantic coastal plain, in the two contiguous Neotropical provinces (Veracruzian and Petén) , from Cardel, Veracruz to Ciudad Carmen, Campeche.

Front of male abruptly, subvertically declivous between the antennae, with no frontal fovea, but with the ventral margin of the declivity produced anteriorly, at a sharp angle, with the anterior margin of this shelf strongly concave medianly. Clypeus abnormal, medianly elevated from apical margin to a high rounded tubercle in front of the concave frontal shelf, and then abruptly . declivous so that there is a narrow space between clypeal tumulus and frontal margin. This clypeal tumulus connected to the front by a pair of strong, high, divergent laminae, one on each side of the concavity of the frontal shelf. When seen from directly above, the two laminae, posterior clypeal wall, and anterior frontal. margin form a transverse excavation (Pl. III, 1) which, at first, gives a false impression of a frontal fovea.

R. appendiculata stroheckeri Park.

Panama.

Front of male abruptly, subvertically declivous between the antennae, with no frontal fovea, and with a straight, perfectly simple descent to unite with the base of the clypeus. Clypeus abnormal, with a
as in *appendiculata*,

teriorly, and not connected by a pair of high laminae to the front. The space between the clypeal tumulus and front, therefore, wider, perfectly simple, and with no illusion of a foveal excavation (Pl. III, 7).

Reichenbachia falsa Raffray

Raffray (1890, p. 311-312) discovered this species in the Reiche collection misidentified as *Bryaxis sarcinaria*, in company with the true *Reichenbachia sarcinaria* (Schaufuss). He described *falsa* later (1904, p. 170-171, fig. 65, 66, 67) on this male specimen, and separated *falsa* Raffray (1904) from *callosa* (Raffray, 1890) and *sarcinaria* (Schaufuss, 1887). Raffray placed these three species in Group XL, although *falsa* lacked a frontal fovea.

Material in the Dampf collection has clarified the position of this species, and the following data are derived from a study of four males. The head is abnormal. The occiput is circularly tumid medianly, behind the two prominent vertexal foveae. This occipitovertebral tumidity has its anterior face margined by a semicircle of minute, scaloid setae. The entire surface of the head evidently pubescent, save for the top of the occipital tumidity, and the vertexal foveae which are nude. The long, gently declivous front has no frontal fovea. Mandibles simple, without external teeth. This diagnostic area is illustrated (Pl. VIII, 8). Antennae with segment V very abnormal ; its dorsal face inflated, irregularly obpyriform, and sparsely, very coarsely punctate (Pl. VIII, 9) ; its mesial face is covered with very large poroid punctures in a regular pattern (Pl. VIII, 10) ; its ventral face is irregularly excavated and ridged, and subject to considerable variation (Pl. VIII, 11, 12). Pronotum normal for genus. Elytra strongly trifoveate, with a long discal stria extending to apical four-fifths. Abdomen with basal carinae arcuate, nearly one-half the segmental length, separated at their bases by slightly more than one-fourth segmental width, but at their apices separated by about one-third segmental width. Intermediate coxae subcontiguous. Metasternum medianly strongly concave. Sternites narrowly medianly flattened, the last slightly concave. All legs simple, save that each middle coxa bears a short, truncate process on its mesial face which is difficult to discern ; middle tibiae with the usual subapical spur. Integuments not brilliantly shining as a consequence of the abundant, short, appressed pubescence and evident punctulation.

Two males at light at night, January 1, 1939, in a garden at Pocvicuc, Tabasco. This locality on the Rio Usumacinto, at 25 meters. A. Dampf.

Two males at light at night, January 23, 1939, sea level, at Ciudad Carmen, Campeche. A. Dampf.

This is an Atlantic slope species, in the Neotropical Petén province. Originally put in Group XL (Raffray, 1904; Park, 1942) ; this course is incorrect, and the species must go to Group LIX, with *designata* (Sharp) . This latter species has been noted previously in this paper, and its wholly different male antennae quickly separates it from *falsa*.

Diagnosis of Female. The following description adds to the general information since the female of *falsa* has not been isolated previously. This sex is strictly similar to the male save for the following exceptions. (1) The head has the occiput medianly tumid, but very much less so ; this tumidity extends anteriorly as a low, convex swelling, passing between the nude vertexal foveae, and ending at the interantennal rim of the front. (2) The antennae have the fifth segment only abnormal. Segment **III** elongate, obconical, slightly longer than the elongate second ; **IV** obconical, slightly longer than wide, shorter than third ; **V** elongate, cylindrical, slightly wider than adjacent segments, about twice longer than wide, about twice longer than fourth, as long as sixth and seventh united but shorter than third and fourth united ; **VI** slightly longer than wide, as long as fourth ; **VII** shorter than sixth, slightly longer than wide ; **VIII** quadrate, shortest segment. (3) *Metasternum* elevated and medianly slightly concave. (4) *Sternites* evenly and simply convex. (5) The legs simple.

The structure of the head is that of Group **LIX** and the females of *falsa* and *designata* are quickly separated on the anatomy of the fifth and sixth antennal segments (p.370) . The longitudinally convex vertexal structure and the nude foveae separate females of *falsa* from such species as *sarcinaria* with flattened to evenly convex vertex and pubescent vertexal foveae. It resembles the female *carinifer* most closely but the antennae are different, and *carinifer* has the simple elevated metasternum of most females of the genus.

Based on one female at light at night, January 24, 1939, at sea level, (Ciudad Carmen, Campeche ; and two females at light at night, during May, 1938, at Sanctumpó, Chiapas (Atlantic slope of Chiapas, bordering on Tabasco) . The Campeche capture by A. Dampf, the Chiapas capture by Cesar Ocampo. These records all lie within the Petén province of Smith (1940) .

***Reichenbachia falsa pipa* new variety**

This qualitatively distinct variety is based on a male which is homologous with *falsa falsa*, save that each elytron is bifoveate instead of trifoveate. The middle elytral fovea is not just smaller, or inconspicuously placed, but is totally absent.

Based on one male taken at light at night, January 1, 1939, at Pocvicuc with the two males of *falsa falsa* just noted.

This striking variation is the first of its kind in the genus, to my knowledge, and should be looked for in other species since the group key has used the number of basal elytral foveae in part (Raffray, 1904; Park, 1942).

Reichenbachia phantasmoides new species

Type Male. 1.74 mm. long by 0.74 mm. wide. Shining uniform yellowish brown, the integuments hardly perceptibly punctulate, with short, rather sparse pubescence.

Head very abnormal (Pl. VI, 1) with prominent, coarsely faceted eyes a little longer than the distinct tempora. The most unusual feature is a prominent median, longitudinal tubercle. This begins on the occiput, where the tumulus is highest, and extends apically to join the vertex, just before the head is depressed in a broad interantennal, vertexofrontal concavity. Three lightly pubescent cephalic foveae: a small, deep vertexal fovea on each side of the occipitovertebral tumulus, each in a deep depression; a shallow frontal fovea at bottom of vertexofrontal concavity. Front regularly declivous beyond interantennal rim; clypeus simple; mandibles simple. Maxillary palpi as for genus. Ventral surface of head with a low, inconspicuous median longitudinal ridge.

Antennae very abnormal, more than half as long as body (0.94 mm.); **I** elongate; **II** subquadrate, short; **III** subtriangular, shorter than second; **IV** sublenticular, slightly wider than third, about as long; **V** and **VI** very irregular (Pl. VI, 1, 2). **V** obliquely suboval, very large, dorsal face evenly swollen, much wider than long; lateral face in reality hollow, its foveoid cavity however covered by a translucent wall save for a narrow, semilunar orifice at lateroapical aspect; mesial face apically produced in a pair of laminoid processes, each of which bears an overlapping comb of apical setae, these convergent arms arise from the dorsal and ventral aspects of the mesial face; ventral face medianly concave, this concavity roughened between the lateral foveal complex and the mesial laminoid complex. **VI** very asymmetrical, articulated by a peduncle, the segment as long as fifth but much narrower, its mesiodorsal face excavated, the concavity fringed by setae, with an obscure, translucent process curving from mesial margin toward the dorsal lamina of the fifth segment. **VII** narrower and half as long as sixth, dorsally subquadrate, ventrally produced; **VIII** of same shape, smaller; club long and slender, **IX**, **X** and **XI** as long united as **IV** to **VIII** inclusive, all three longer than wide, last as long as two preceding united.

Pronotum as for genus. Elytra each deeply bifoveate, with entire sutural stria, and long discal stria to apical three-fourths. Basal abdominal carinae straight, parallel, one-third the segmental length, separated by nearly one-half the segmental width. Sternites simple, faintly flattened medianly, the last with an apical, coarsely punctate area. Intermediate coxae strictly contiguous, the coxal cavities confluent. Middle coxae each armed with a prominent spine, the legs otherwise simple. Metasternum medianly concave.

Described on one male collected at light, during May, 1938 by Cesar Ocampo in virgin forest, 100 meters altitude, near Sanctumpó, Chiapas. This is an Atlantic slope species, in the Petén province noted previously for so many species. It is a difficult species to orient. It certainly belongs in the seventh division of the genus, those having abnormal heads (Raffray, 1904). Within this division it fits no known group, and hence *phantasmoidea* is allocated to a new group, LXV, characterized by the following features. (1) Head with three normally placed foveae (2) Head with a prominent, median, longitudinal tumulus from protruding occiput to center of vertex. (3) Posterior tibiae normal. (4) Male antennal segments V and VI abnormal. The new group is most closely related to Group LIX.

This fifty-ninth group, however, holds species in which the frontal fovea is absent (*designata* Sharp and *falsa* Raffray) in both sexes. In passing it should be noted that *biclavata* (Reitter) is probably misplaced in Group XLI, as the frontal fovea is absent in this species as well ; it probably belongs in Group LVI if the head is normally convex, otherwise it must go -to Group LIX. At present the decision is impossible as I have no specimens of this Colombian species.

***Reichenbachia dampfi* new species**

Holotype Male. 1.8 mm. long by 0.74 mm. wide. Shining reddish brown with inconspicuous pubescence and punctulation.

Head very abnormal (Pl. IV, 2), with coarsely faceted eyes nearly twice the temporal length. Vertex simply flattened, if seen from above ; however, with oblique examination, the vertex is seen to be medianly slightly carinoid longitudinally, from a point between the vertexal foveae to the frontal fovea. These three cephalic foveae large, deep, pubescent, subequal in size : the two vertexals on a line **through posterior third** of eyes ; the frontal medianly between the antennae, this fovea abnormal, tucked beneath the end of the weak elevation noted, with its orifice directed apically instead of dorsally. Front steeply declivous apical to interantennal line, narrowing rapidly, and at bottom of declivity forming a prominent pair of divergent, obliquely truncate frontal horns,

each horn with a fringe of stout setae on its oblique end. Clypeus also abnormal, slightly expanded laterally (approaching the Brazilian genus *Nodulina*) and transversely, abruptly erected into a quadriarcuate laminoid crest, this crest fringed with stiff setae which rise vertically and medianly mingle with the apically-directed setae of the frontal horns. Labrum apically concave. Mandibles each with a prominent, acute external tooth meeting ramus in an acute angle. Maxillary palpi as for genus. Lateral surface of head abnormal for genus, deeply concave from the ventrally-broached antennal acetabulum each side, continuing between eye and end of clypeal wing, so that the median longitudinal ridge of the ventral surface of the head stands out in bold relief.

Antennae very abnormal (Pl. IV, 2) with respect to the second and sixth segments. Segment **II** much wider than long, much wider than first or third, transversely oviform, transversely very arcuate, the dorsal face evenly tumid, the ventral face deeply foveate in mesial half. Segment **VI** very large, wider and much longer than the small fifth and seventh segments, nearly three times as long as wide and nearly three times as long as seventh segment, longitudinally an elongate oviform for dorsal face, ventral face flattened, with a large oval fovea in basal half.

Pronotum as for genus, save that lateral pubescent foveae are smaller than usual, the median fovea minute and punctiform.

Elytra with entire sutural striae, each elytron deeply trifoveate, with a short discal stria extending through basal half of elytral length.

Five visible tergites, with the basal abdominal carinae of the first strong, slightly divergent, one-third the segmental length and separated by the-third the segmental width. Five visible sternites contracted, medianly flattened, the last nearly as long as the first. Metasternum deeply concave between tuberculoid side walls.

Legs generally short for their thickness. Anterior and middle femora inflated in comparison with the very slender posterior femora. Middle coxae each with a truncate spinoid process at mesioposterior angle; middle trochanters with a tooth at center of ventral face; middle tibiae with the usual anteapical spine.

Allotype Female. As for male with the following exceptions. (1) Front lengthily declivous from a point posterior of interantennal line, so that the frontal fovea is wholly on the declivity; frontal horns absent; clypeus normal; sides of head and ventral surface of head normal; mandibles simple, not externally toothed. (2) Antennae relatively normal, segment **I** subquadrate; **II** suboval, as long as first dorsally, slightly narrower, longer than wide; third to eighth much narrower, subequal in width, **III** obconical-elongate, as long as second, two times longer

than wide ; IV shorter, slightly longer than wide ; V elongate-cylindrical, as long as third ; VI elongate-cylindrical, three times longer than wide, as long as seventh plus eighth, not as long as fourth plus fifth ; VII elongate ; VIII quadrate. (3) Sternites simply convex. (4) Metasternum medianly elevated and simply flattened and declivous posteriorly. (5) Legs simple.

This species is named in honor of Dr. Alfonso Dampf. It is based on twenty-two males and three females, collected in the state of Oaxaca, at light at night, as follows.

One male, December 30, 1931, Tolosa (a railway station near the border of Veracruz), about 50 meters. José Parra.

Six males and two females, January 1, 1932, Tolosa, as above.

One male, February 13, 1932, Tuxtepec, on the Rio Papaloapam, at 50 meters elevation, on the Gulf Coastal Plain near Veracruz. A. Dampf.

One male, February 15, 1932, Paso de Bodegas (near Ojitlan) on the Rio Sto. Domingo, 200 meters. A. Dampf.

Two males, March 3, 1932, Chiltepec, on a tributary of the Papaloapam, about 100 meters. A. Dampf.

One male, December 13, 1937, San Cristobal (a small Indian village on the Gulf Coastal Plain, near the border of Veracruz), 150 meters elevation. A. Dampf.

One male and one female, December 14, 1937, Rancho Monter, on the Rio Cajones, 150 meters, same area as preceding record. A. Dampf.

Three males, same data as preceding, but at a second trap light.

One male, December 15, 1937, same data as preceding.

One male, same data as preceding, but at a second trap light.

Three males, December 16, 1937, data as preceding.

One male, December 16, 1937, same data as preceding, save that the captures were after midnight.

This very interesting species is a member of the Neotropical Veracruzian province of Smith (1940). It fits no known Neotropical group, *its* nearest allies being in Group XLV in California, these latter having antenna! segments II, V and VI abnormal in the males. Group XLV is not feasible, however, since *dampf*i has an abnormal head and hence belongs in Division VII of the genus. The slightly expanded clypeus *is an* approach to the Amazonian genus *Nodulina*, the abnormal front^{is} roaches the Bolivian genus *Phoberus* but the palpi of *dampf*i are typical of *Reichenbachia*. For these reasons, it is felt that the species should be placed in a new group, Group LXVI, although subgeneric olation may become desirable later.

Among the paratypes there is some variation in the length of the discal elytral stria, and in the base of the pronotum. The holotype, allotype and most of the paratypes have this stria one-half the elytral length, a few paratypes have this stria three-fourths as long as elytra. The pronotal base is more obviously punctate than other parts of the body, and in some of the paratypes this sculpture tends to crease the basal rim, save in the center where the median fovea becomes elevated and cuneiform.

***Reichenbachia dampfi obsoleta* new subspecies**

This new variety is based on a qualitatively different head. The frontal fovea is wholly absent, and the front becomes declivous posterior of the interantennal line, is consequently longer and more gently declivous, and the start of the declivity is biarcuate, with a minute tooth where the frontal fovea lies in *dampfi dampfi*.

Otherwise, the new subspecies agrees with the typical form, having the same remarkable frontal horns, transversely crested clypeus, externally toothed mandibles, excavated lateroventral cephalic area, abnormal second and sixth antennal segments, *et cetera*.

Described on one male taken at light at night, December 5, 1930, in a banana plantation, at Huixtla, Chiapas. This locality is at forty meters altitude, on the Pacific Coastal Plain. Jose Parra. In the Neotropical Tapachulan province, this subspecies is important for two reasons. It is the Pacific counterpart of *dampfi dampfi*, indicating once more how the pselaphid fauna tends to divide into a Pacific and an Atlantic Neotropical assemblage on either side of the Nearctic central highlands, as on either side of Neotropical highlands (Park, 1943). Second, the presence or absence of the frontal fovea, in the same species population, may lead eventually to a regrouping of the species in the genus on other, more stable, features.

Group reallocations, based on new morphological findings, and description of new species, have served to partially disorganize previous keys to species of Neotropical *Reichenbachia* (Park, 1942) and especially for the Mexican fauna (Park, 1943, 1944). Therefore, new keys to species of *Reichenbachia* known to occur in Mexico and Guatemala are desirable, in advance of monographic treatment.

The two keys which follow are constructed on different bases. The key to males is relatively complete. The key to females is frankly incomplete, and based on specimens of this sex in the author's collection, with very few exceptions.

In general *Reichenbachia*, of the area under study, which have the metasternum medianly concave (usually deeply, between raised or

tuberculoid walls) are males. Such specimens also usually have the sternites medianly flattened to concave, the last sternite large and often especially modified ; and may or may not have modified legs (compressed tibiae, swollen femora, spined coxae and trochanters), externally toothed mandibles, abnormal antennae, abnormal front and clypeus. In all cases, direct dissection to demonstrate the aedeagus is the best proof of sex.

In general *Reichenbachia*, of the area under study, which have the metasternum medianly elevated and simply convex, slightly flattened or simply declivous posteriorly, are females. Such specimens usually have simply convex sternites, including a short and simple last sternite; they always have simple mandibles, unarmed front, unarmed clypeus, and simple legs; their antennae may or may not be more or less abnormal.

The two keys to *Reichenbachia* follow.

KEY TO MALE *REICHENBACHIA* OF GUATEMALA AND MEXICO

- 1 Posterior tibiae normal, neither dilated nor excavated 6
 Posterior tibiae abnormal, the external face excavated medianly or apically, or if not excavated then very dilated medianly or apically, or both dilated and excavated (Pl. II, 4, 5; VII, 6; VIII, 1, 2, 3) 2
- 2 (1) Posterior tibiae dilated medianly or apically 3
 Posterior tibiae only slightly wider apically, but with a conspicuous, short, glabrous excavation at apical five-sixths of external (lateral) face *sallaei*.
- (2) Posterior tibiae excavated or with an oval concavity on the external (lateral) face 4
 Posterior tibiae not excavated 5
- 4 (3) Posterior tibiae dilated at apical three-fourths, this dilated face externally excavated (Pl. VIII, 2); middle femora with a prominent spinoid tubercle on ventral face at apical end of a long concavity (Pl. VIII, 5) *quotuma*.
 Posterior tibiae dilated **in middle third, this dilated face** externally excavated (Pl. VIII, 3); **middle femora swollen** but not ventrally spined (Pl. VIII, 4) *latipes*.
- 5 (3) **Each mandible with an external tooth** (P. VIII, 6)

Mandibles simple, not externally **toothed** (Pl. VII, 12

jailscoensis.

| | |
|---|-------------------------|
| 6 (1) Frontal fovea absent | 7 |
| Frontal fovea present (very large to minute, nude or pubescent, placed between antennae or far down on the declivous front) | 16 |
| 7 (6) Antennal segment II simple | 10 |
| Antennal segment II abnormal (with an apically-directed spine, or transversely ovate with ventral face foveate) | |
| 8 (7) Antennal segment II transversely oval, with the ventral face arcuate and bearing a deep fovea; segment VI longitudinally oviform, ventrally foveate (Pl. IV, 2 for antennae only) | <i>dampfi obsoleta.</i> |
| Antennal segment II elongate, with the ventral face extended apically as a sharp spine (Pl. VII, 2, 3, 4, 5) | 9 |
| 9 (8) Antennal segment V distinctly longer than VI (Pl. VII, 2,3) | <i>nominata.</i> |
| Antennal segments V and VI subequal in length (Pl. VII, 3, 4) | <i>sonorensis.</i> |
| 10 (7) Occiput and vertex covered by a conspicuous thatch of long, apically-directed, flavous setae and medianly bisected by a carina between vertexal foveae (Pl. IV, 1) | <i>carinifer.</i> |
| Head not setose as described | 11 |
| 11 (10) Antennal segment V with dorsal face distinctly punctate, mesial face with an area of coarse pores, ventral face with several irregular impressions and an oblique fovea (Pl. VIII, 9, 10, 11, 12) | 29 |
| Antennal segment V not as described | 12 |
| 12 (11) Antennal segments V and VI bearing conspicuous appendages from their ventral faces (Pl. III, 1) | <i>appendiculata.</i> |
| Antenna) segments V and VI not bearing ventral appendages | 13 |
| 13 (12) Antenna) segments V and VI each very long, each as long as segments II, III and IV united | <i>designata.</i> |
| Antennal segments never as long as described above | 14 |
| 14 (3) Each mandible with a strong tooth on external face | <i>biscuspida.</i> |
| Mandibles simple, not externally toothed | 15 |

- 15 (14) Antennal segments IV and V equal in length *bifoveata* .
 Antenna] segment IV slightly shorter than V *celata*.
- 16 (6) Antennal segments VI to XI inclusive abnormal *reichei*.
 Antennae not as described 17
- 17 (16) Antenna] segment **II** transversely oval, with the ventral
 face arcuate and bearing a deep fovea (**Pl. IV, 2**)
dampfi dampfi.
 Antennal segment II not as described 18
- 18 (17) Antenna] segment V very large, with the ventral face
 foveate (Pl. **II**, 9, 10) , **VI** simple *sarcinaria* and *intacta*.
 (see p. 350)
 Antennae not as described 19
- 19 (18) Antennal segments V and VI abnormal 20
 Antennae relatively normal, intermediate segments all sub-
 equally wide, and if elongated not foveate **or** spined 26
- 20 (19) Antennal segments V and **VI** large, lateral facts rounded,
 each with apicomerial face strongly produced into a
 spinoid process, these processes obliquely subappressed
mexicana.
 Antennae not as described 21
- 21 (**20**) Metasternum with a median, longitudinally carinoid, small
 tubercle near the apical margin *dentisterna*.
 Metasternum not medianly tuberculated 22
- ²2 (21) Each mandible with an external tooth; antenna] segments
V and VI not as described below 23
 Mandibles simple; antenna] segments V and **VI very ab-**
normal (Pl. **VI**, 1, 2) ; V large, obliquely **ovoid**, **mesi-**
ally produced in two converging, setose processes; VI
narrower, elongate, asymmetrically articulated, with
concave mesial face *phantasmoidea*.
- ²³ (22) Antennal segment **VI slightly longer than V, both about**
 equally wide, wider than **adjacent segments, both simply**
 flattened beneath (Pl. VII, 13) *diversula*.
 Antennal segment **VI distinctly shorter than V** 24

- 24 (23) Discal elytral stria very short, not more than one-third the elytral length 25
- Discal elytral stria very long, extending to apical three-fourths or more of elytral length; antennal segments V and VI abnormal (Pl. VII, 15); V obtriangular, slightly longer than wide; VI shorter and narrower, subpyriform; both V and VI with ventral faces foveate, fovea of V densely pubescent, fovea of VI shallower and granulated
- 25 (24) Antennal segment V ovate, foveate in apical half of ventral face with the mesial wall of fovea raised into crest; VI also abnormal (Pl. IV, 4, 5), ovate, smaller, ventral face flattened, with a circular area in basal half asperate-setose; discal elytral stria clearly indicated, extending through basal third *guerrensis*.
- Antennal segment V irregularly, triangular, the segment ventrally arcuate, the arcuate surface bearing a fovea; VI transverse, shorter than fifth and wider than long; discal elytral stria very short and obsolete (*ex* Sharp, 1887) (this species unknown to author, and the assumptions are made that it has externally toothed mandibles and simple hind legs) *diversicornis*.
- 26 (19) Each elytron with a discal stria which does not extend much beyond middle of elytra, or is shorter 27
- Each elytron with a discal stria which is very long and well-developed, extending to apical three-fourths or apical seven-ninths of elytral length 28
- 27 (26) Antennal segments III and V subequal in length and longer than IV or VI *vinusqua*.
- Antennal segments V and VI elongated and longer than IV *parviceps*.
- 28 (26) Middle trochanters each with a median, small and obtuse tooth; last sternite relatively long, strongly oblique laterally, truncate apically, with a large and ornate median concavity *irrita*.
- simple, not toothed; last sternite relatively short, simple, convex save for a small depression in basal third *juxtairrita*.

| | |
|---|---------------------|
| 29 (11) Base of each elytron trifoveate | <i>falsa falsa.</i> |
| Base of each elytron bifoveate | <i>falsa pipa.</i> |

This key to male *Reichenbachia* known from Mexico and Guatemala is complete, with the exception of four species described in the genus "*Bryaxis*" and assigned with great doubt to *Reichenbachia* by Raffray (1904) but without group allocation. Since the four are not known to the author, and the ancient descriptions do not permit even a conceptual view of their exact anatomy, this course was followed (Park, 1942). Until the type specimens have been seen they may not be allocated. These species are : *biocellata* (Schaufuss), *impunctata* (Schaufuss), *crassipalpis* (Sharp), and *impubis* (Sharp). In addition to these four, which may not be *Reichenbachia* at all, two of Sharp's species have been integrated in the key, but with reservation. Thus *intacta* is certainly *Reichenbachia* and probably near, or identical with, *sarcinaria*; *diversicornis* is described as having no discal elytral stria, but if this is actually so then the species is not *Reichenbachia* at all. Nevertheless, its other features fit this genus and the assumption is made that the stria is present but very abbreviated.

INCOMPLETE KEY TO FEMALE *REICHENBACHIA* OF GUATEMALA AND MEXICO

| | |
|--------------------------------------|---|
| Each elytron with two basal foveae | 2 |
| Each elytron with three basal foveae | 6 |

| | |
|---|---|
| 2 (1) Head with three foveae : a pair of vertexal foveae between the eyes, and an anterior frontal fovea | 3 |
| Head with two foveae, the frontal fovea absent | 4 |

- (2) Frontal fovea normal in position, between the antennal tubercles behind the frontal declivity, with its orifice open dorsally *juxtairrita.*
Frontal fovea abnormal in position, wholly on the frontal declivity, beyond antennal tubercles, with its orifice open apically *guerrensis.*

- 4** (2) Basal abdominal carinae very short and inconspicuous, one-fifth as long as the first visible tergite

| | |
|--|---|
| Basal abdominal carinae much longer, one-half as long as the first visible tergite | 5 |
|--|---|

- 5 (4) Antenna! segments IV, V, and VII subequal in length,
longer than VI *bifoveata bifoveata.*
Antenna! segment V nearly as long as III and nearly two
times as long as wide ; IV longer than sixth ; VI and
VII slightly shorter than fourth and subequal in length
celata.
- 6 (1) Head with three foveae : a pair of vertexal foveae be-
tween the eyes, and an anterior frontal fovea which
may lie between the antennal tubercles or wholly on
the declivous front 11
Head with two vertexal foveae, but the frontal fovea is
wholly absent 7
- 7 (6) Antenna! segments V and VI subequal in length and
width 8
Antennal segment V longer than VI
- 8 (7) Antenna! segments V and VI each as long as VII and
VIII united *designata.*
Antenna! segments V and VI each not as long as the
united length of VII and VIII *sonorensis.*
- (7) Antenna! segment IV shorter than III *falsa.*
Antennal segments III and IV equal in length 10
- 10 (9) Antennal segment II quadrate *carinifer.*
Antennal segment II cylindrical, longer than wide *nominata.*
- 11 (6) Frontal fovea more or less on the frontal declivity, with
its orifice open apically 12
Frontal fovea normally placed, with its orifice open dorsally 13
- 12 (11) Basal abdominal carinae very short, one-sixth as long
as the first visible tergite *reichei.*
Basal abdominal carinae much longer and conspicuous,
almost one-third the length of the first visible tergite
dampfii and *diversula.*
- 13 (11) Discal elytral stria not more than half the elytral length 14
Discal elytral stria much longer, from three-fourths to
five-sixths the elytral length 15

- 14 (13) Antennal segment V longer than VII or IV *pubescens.*
 Antennal segment VII longer than V or IV *serapha.*
- 15 (13) Four species, the females of which closely resemble each other : *guatemalensis.*
jaliscoensis.
latipes.
sallaei.

***Bunoderus* (Raffray, 004)**

The genus *Bunoderus* and two species were described by Raffray (1904, p. 151-153, fig. 58), and keyed out by Park (1942, p. 154). The first species described, *carinicollis*, was based on a female specimen, and noted as coming from "Mexico." I designate this species as the genotype. The second species described, *longipilis*, was based on both sexes, and was collected at Blumenau, Brazil.

***Bunoderus carinicollis* Raffray**

Description of the Male Sex. 1.7 mm. long, reddish-brown, strongly shining; integuments sparsely asperate ; pubescence long, flavous, bristling (0.067 to 0.134 mm. long).

Head with coarsely faceted eyes as long as tempora. Vertex with a pair of small vertexal foveae, each the diameter of an ocular facet, set in deep. depressions. Frontal fovea absent ; front subcircularly concave between antennal tubercles, then abruptly declivous. Strong, transverse frontoclypeal carina sinuate laterally. Head, each side, with a tumid area which extends anteriorly from near a vertexal fovea to the antenna! tubercle, then bends abruptly and passes ventrally, between eye and antennal acetabulum, to the origin of the frontoclypeal carina. (After treatment, these two tumidities are seen to be air-filled cavities of a glandular appearance, and are then conspicuous as orange-brown areas against the dark cephalic integument.) Labrum and mandibles simple. Posterior face of occiput and dorsal transverse-cervical sulcus bisected by a short carina. Ventral surface of head medianly, ongitudinally carinated. Maxillary palpi as for genus.

Antennae eleven-segmented, normal ; segments as described for female, save that segment XI is asperate, with a deep subapical sinuation on ^{ap.}icoventral face, this area being foveoid when seen from optical section.

ronotum generically diagnostic; three subequal antebasal foveae which are free and nude ; disc bisected by a strong, entire carina from apical margin to basal bead, interrupted only by the median antebasal fovea. This discal carina, uncommon in neotropical pselaphids, is reminiscent of the Venezuelan *Neodalmus* and the first two groups of

Each elytron with three deep, nude basal foveae, entire sutural stria, and a long discal stria which is slightly recurved laterally in the last fifth of its length, this stria three-fourths the elytral length.

Five visible tergites in median length ratio of 3/1.5/1.5/2/2 with first three having narrow, strong margins ; first with a pair of basal abdominal carinae one-third the segmental length and separated by one-fourth the segmental width ; last two forming a triangular outline, reminiscent of the abdominal apex of male *Reichenbachia celata* and allies tergites longitudinally strongly deflexed ventroposteriorly, to give a convex outline ; third with a slight tumulus at center of apical margin.

Five visible sternites (true first visible on dissection, but hidden medianly by metasternum, and laterally involved in metacoxal cavities) in median length ratio of 1.8/0.3/0.2/0.1/2.5 with the first with a strong, cuneiform median longitudinal carina ; last with a longitudinally oval fossa for median third of width and three-fourths of length ; sternites medianly flattened, and in two steps, the first four much more ventral than the abruptly dorsad fifth sternite ; aedeagus large, in repose as long as last four sternites united.

Metasternum with a flat-bottomed, longitudinal sulcus between a pair of tubercles, each tubercle a broad, low cone with a subacute apex. Intermediate coxae distinctly subcontiguous ; middle trochanters each with an angular, subdentoid elevation at center of ventral face. Posterior tibiae abnormal, the mesial face flat, the lateral face conspicuously, evenly swollen in middle third of length. Tarsi as for tribe, with a single, thick tarsal claw.

One male, at light at night, October 11, 1939, at 700 meters, virgin forest near the Esperanza coffee plantation, Chiapas. Collected by Dr R. Nettel.

***Bunoderus nevermanni* new species**

Type Male. As for above description of *carinicollis* save for the following differences.

(1) The lateral sinuation of the transverse frontoclypeal carina is pronounced, so that the carina, each side, is erected into a small tooth.

(2) The antennae are abnormal ; segment V as long as second, but distinctly longer than either IV or VI ; segment IX distinctly larger than tenth, as long as wide, obconical, with its lateral face sharply produced apically.

(3) Sternites radically different ; first visible of same relative size but not medianly carinate, medianly with the surface elevated as a triangular field and with a prominent, oblique, laminoid tubercle at apex of this triangular field, the tubercle inclined over the median third of the posterior metasternal margin ; fifth very deeply excavated to form

a transversely semicircular fossa for almost the entire segmental width and length, with the subvertical apical wall abruptly erected in a longitudinal tubercle.

(4) Metasternum with a deep, pyriform excavation which is flanked posteriorly by tuberculoid prominences but does not reach the posterior metasternal margin, and is covered posteriorly by the tubercle of the first visible sternite.

(5) Each middle trochanter with a long arcuate, cylindrical, truncate spine at mesioventral angle ; middle tibiae abnormal, abruptly excavated on mesial face at apical five-sixths, with the basal end of excavation overhung by a stout spine at apical three-fourths. Posterior tibiae more abnormal than in *carinicollis*, the lateral face even more strongly swollen medianly, and mesial face obliquely, longitudinally foveoid, the tibia as a whole obliquely sinuate, to give an irregular contorted outline.

Described on one male, the type, taken by Dr. Dampf at light at night, December 15, 1937, at 150 meters, on the shore of the Rio Cajones, near Rancho Monter, Oaxaca.

Named in honor of the late Ferd. Nevermann, of San Jose, Costa Rica.

The new data necessarily amend the position of *Bunoderus* in the tribe. The basal elytral foveae are two to three, as of Raffray (1904) not three foveae, as of Raffray (1908). Further, the intermediate coxae are distinctly subcontiguous, at least in the Mexican material, not contiguous as of Raffray (1908). This coxal structure must be taken into account in future keys, since the species of *Bunoderus* will not key out in previous keys (Raffray, 1908 ; Park, 1942). Instead the genus must be keyed out with those species of *Reichenbachia* having subcontiguous middle coxae (Park, 1944, p. 241)

***Panabachia* (Park, 1942)**

This genus was erected (Park, 1942, p. 153) for *Bryaxis vulnerata* Sharp (1887, p. 31, Pl. I, fig. 15), the genotype. This species was described on a single male, from Tolé, Panama. To this genus must be added a second species, *impressicollis* (Sharp, 1887, p. 30) also based on a single male, from San Juan in Vera Paz, Guatemala.

The genus is quickly recognized among Neotropical Brachyglutini by the presence of a deeply excavated pronotal disc. Neither of Sharp's species have been reported since their description (Raffray, 1904, 1908, 1911; Park, 1942) but in the present material the genotype was represented by nine males, from three Mexican states, as follows.

Two males, at light at night, April 21, 1930, at 1540 meters, prior to the onset of the rainy season, in deep ravines full of semitropical ^{veg}etation, near Cuernavaca, Morelos. A. Dampf.

Four males, at light at night, August 14, 1934, at 1250 meters, in the ravine, full of luxuriant tropical vegetation, of a small brook known as the Arroyo de los Pintores, near Coatepec, Veracruz. A. Dampf.

Two males, at light at night, October 29, 1939, at 800 meters, at the Fortuna coffee plantation, Chiapas. Dr. R. Nettel.

One male, at light at night, October 30, 1939, at the same place by Dr. Nettel.

This well-marked species, then, is known from Panama and from three Mexican states, with an altitude range of from 2400 to 4600 feet.

The following structural features, described from the nine males listed, will serve to amplify the original, inadequate description of *vulnerata*. The size range is from **1.1 to 1.3** mm. long. Integument chestnut **brown**, moderately shining, with yellowish brown appendages ; pubescence very short (0.015 mm. average length) .

Head with a **pair of large, conspicuous vertexal foveae between the eyes** ; front between antennae thickened, with a shallow, arcuate impression just posteriad of this ridge, and with a very indistinct impression from each vertexal fovea almost reaching this arcuate impression in some specimens, and these longitudinal impressions confluent with the arcuate impression in other specimens ; vertex convex between foveae and foveal impressions ; frontoclypeus, labrum and mandibles simple. Ventral surface of head with a weakly formed median longitudinal carina. Maxillary palpi simple, four-segmented, first segment minute ; second elongate, arcuate, apically inflated ; third short, subtriangular ; fourth segment longest, subconical, with a terminal palpal cone. Simple, eleven-segmented antennae as noted by Sharp.

The diagnostic pronotum is illustrated from dorsal and lateral view (Pl. X, 8, 9) . **In addition it should be noted that the pronotum has three minute, nude, punctiform foveae which are subequal in size, and in the normal antebasal position. These foveae are in addition to the transverse excavation in the anterior third of disc, as well as the lateral cavities. These latter lie one on each side of the median excavation ; they appear to have their floors covered by a taut, thin, possibly sensory integument, the surface of which bears many small granules, and a few larger globules, as in the stigmal plates of *Dermacentor*.**

The base of the elytra is illustrated (Pl. X, 8) ; each elytron bears four distinct basal foveae, an entire sutural stria, and from the third fovea from the suture, there is a very short, faint intrahumeral impression

Five visible tergites and sternites ; first three tergites with narrow but distinct margins ; first tergite with a pair of long, arcuate, divergent basal carinae, separated at base by the maximum strial interspace of

the elytral sutural striae ; last sternite with median apical margin erected into a short, transverse, laminoid cusp.

Legs typically brachysceline, simple, with tarsi of the usual brachyglutine pattern. Middle coxae (Pl. X, 10) and posterior coxae distant

This redescription of the male sex of the genotype places *Panabachia* near *X ybaris*, rather than *Reichenbachia* as formerly supposed.

***Dranisaxa* new genus**

Head with the vertexal foveae wholly absent ; ventral surface of head medianly, longitudinally carinate ; eleven-segmented, simple antennae ; mentum normally small ; four-segmented maxillary palpi simple, first segment minute, second elongate with slender basal two-thirds and gradually inflated apical third, third segment short and subtriangular with convex outer and angulate inner face ; fourth segment longer than second with conical outline and a terminal palpal cone.

Pronotum with unmodified disc and three antebasal foveae, of which the lateral foveae are relatively large and the median fovea is minute.

Each elytron with two well-developed, nude basal foveae, an entire sutural stria, and a broad discal stria which is half the elytral length.

Abdomen with well-developed lateral margins, and with five, visible tergites and sternites, the abdominal segments highly modified in the male sex.

Middle coxae distant, separated by narrow, truncate processes from mesosternum^m and metasternum. Posterior coxae widely separated, and not conically produced. Legs brachysceline, the obliquely articulated femora near their respective coxae. Tarsi three-segmented, first segment minute, last two relatively long ; tarsal segments cylindrical, the last bearing a single tarsal claw. The anterior and middle tarsi of male with the first segment bearing a conspicuous pad of long setae, second and third segments simple (Pl. VI, 8, 9, 10).

Genotype : *Dranisaxa gloydi* new species

***Dranisaxa gloydi* new species**

Type Male. 1.5 mm. long by 0.5 mm. wide, dark reddish-brown, shining, integument subimpunctate save for a few coarse punctures on each side of head from above eye to antennal tubercle, the pubescence sparse but coarse and conspicuous, the setae long (0.07 mm.) and flavous.

Head with coarsely-faceted, prominent eyes twice as long as tempora. Occiput, evenly convex vertex, gently declivous frontoclypeus, labrum and mandibles simple. No trace of vertexal foveae. Maxillary palpi as described for genus. Ventral surface of head with five carinae^a follows : a median, longitudinal carina from submentum to center

of ventral surface ; a lateral, longitudinal carina each side from base of cardo to cervicum; an ocular carina from base of mandible posteriorly to eye, then obliquely ventrad just in front of eye to join the lateral carina at a point beneath the second vertical row of ocular facets.

Antennae eleven-segmented, simple, widely separated beneath small tubercles; segment **I** elongate ; **II** narrower than first, also elongate ; third to eighth smaller, **III** obconical, IV to **VIII** subquadrate ; club well-formed, of last three segments, **IX** transverse trapezoidal, X larger but of similar construction, XI subconical and nearly as long as preceding three, with a deep, pubescent, foveoid sinuation at apicoventral face.

Pronotum and elytra as described for genus.

Five visible tergites in median length ratio of 4/2/1.25/1/0.7 with first three strongly but narrowly margined. First tergite with a pair of basal abdominal carinae nearly one-half the segmental length and separated by one-half the segmental width. Second tergite simple. Third tergite vertical, with the basal half excavated for almost its entire width.' Last two tergites recurved.

Six sternites visible on dissection only, the first being visible laterally but covered medianly by metasternum, and the last four invisible medianly since they are deeply recessed and excavated. Medianly, therefore, one sternite (morphological second) visible. This is a large segment half the length of first visible tergite, without special modification. Beyond this sternite the venter is hollowed out, as noted, and the cavity is partially occupied by the last two tergites.

Middle coxae not contiguous, separated by narrow, truncate sternal processes. Metasternum medianly flattened. Legs relatively simple, save for first segment of first two pairs of tarsi. This basal tarsomere bears a very distinctive and conspicuous brush of long setae (Pl. VI, 8, 9 10).

This remarkably complex species *is* based on twelve males (type and eleven paratypes) , collected by Dr. Dampf at light at night, April 27, 1932, near sea level, at Juchitán, Oaxaca. This locality is in the Pacific drainage of Oaxaca. The species is named in honor of Dr. Howard **K.** Gloyd of the Chicago Academy of Sciences. It has no allies close enough to warrant comparison. Very few genera of pselaphids lack the vertexal foveae, and of these the Nearctic *Nisaxis* appears most closely related.

***Anchylarthron ctenisternum* new species**

Holotype Male. 1.7 mm. long by 0.75 mm. wide, moderately shining, light brown ; integuments almost impunctate save for base of prow.

notum ; conspicuous pubescence very sparse, flavous, of moderate length (0.04 to 0.06 mm.).

Head with prominent eyes twice the length of tempora, each eye of twenty very coarse facets (facets 0.03 mm. diameter). The occiput and posterior vertex evenly, strongly convex; anterior vertex depressed above each eye ; vertexal foveae wholly absent. Front flattened posterior to interantennal line ; frontoclypeal declivity simple and vertical. Mandibles unusually short and blunt. Ventral surface of head longitudinally convex, with the median, longitudinal carina in the form of a low, cuneiform platform. Maxillary palpi as described for *Dranisaxa*.

Antennae long, slender, ten-segmented , as illustrated (Pl. IX, 2) with segment IV much longer than III or V, and segment VI longer than V or VII.

Pronotum with simple, convex disc; a minute median antebasal fovea (0.013 mm. diameter) present ; area just anterior of basal bead scarified by a row of longitudinal, slot-shaped punctures.

Elytra with inconspicuous, entire sutural stria, and a short and inconspicuous intrahumeral impression; basal foveae absent.

Abdomen with five visible tergites and sternites. First three segments with strong, narrow margins. First tergite with a transverse, biarcuate impression one-half the segmental width, flanked on each side by a short, inconspicuous basal abdominal carina, one-fourth the segmental length. Fifth visible sternite modified; medianly concave, this concavity bounded laterally by low tumuli, and apically by the sub-vertical margin ; this apical margin deeply-notched at center, with margin on either side of notch bearing a comb of thin, recurved setae.

Middle coxae distant ; posterior coxae very distant. Metasternum highly abnormal : broadly concave, with the concavity bearing a median, longitudinal crest for apical third, this crest bearing several rows of stiff, short, divergent setae. Legs long, slender and unmodified.

Allotype Female. As for male, save that (1) occipitovortex simply convex ; (2) a pair of rudimentary vertexal foveae are present ; (3) antennae simple, eleven-segmented, as illustrated (Pl. IX, 1) ; (4) median pronotal fovea obsolete ; (5) fifth sternite simple; (6) metasternum simple, evenly convex to slightly flattened medianly.

Based on a pair (holotype and allotype) collected by A. Dampf at light at night, April 3, 1931, at 430 meters, on the shore of the Rio Pilón , near Montemorelos, Nuevo Leon.

This is an important record. The new species is Nearctic, in the Atlantic drainage; it lies within the Tamaulipan province of Smith (1940). This is the first record of the genus *Andhyllarthron* south of the United States, and the twenty-third genus of pselaphids known to

hold species from the United States and the area south of the Rio Grande. It is not very closely allied to the other species of the genus, the relatively simple head of the male, the total lack of vertexal foveae in this sex, and the notable male metasternum separating the species. The lateral pronotal foveae are present in both sexes of *ctenisternum*, but are vestigial. This species resembles *curtipenne* Casey, of Iowa, most closely in male antennae and this latter is the closest zoogeographically

***Mitona* (Raffray, 1904)**

This genus, holding four species, was described by Raffray (1904, p. 232). The species were keyed out and a genotype designated (Park, 1942, p. 175-176), but up to the present no additional species have been added, and the genus has not been noted north of South America. Its species (Bolivia, Venezuela, Colombia) are allied to *Xybaris* and *Pselaptus*. From *Xybaris*, *Mitona* is separated by lacking lateral pronotal foveae ;; from *Pselaptus*, by having a median pronotal fovea and four basal elytral foveae.

Two species, represented by abundant material in both sexes, appear to belong to *Mitona* in the Dampf material examined.

Both of these Mexican species agree in the following pertinent details.

(1) Males with the last sternite strongly produced medianly at apex, so that the sternite juts over the last tergite in a shelf-like process. The last tergite medianly elevated into an oval, longitudinal tumulus.

(2) Both sexes with metasternum medianly, longitudinally concave, and bearing each side a strong metasternal carina which extends from lateral angle of mesocoxal cavity to posterior metasternal margin.

(3) Both sexes with first visible sternite medianly, longitudinally carinate for three-fourths of segmental length.

(4) Abdomen with well developed margins, and first tergite with a pair of basal abdominal carinae one-fourth the segmental length and separated by one-fourth the segmental width.

(5) Distant middle coxae (which separates the species from *Xybarida*), and a bicarinate, truncate mesosternal plate.

(6) Ocular carinae as in certain species of *Xybaris* (Park, 1942, Pl. VIII, 11).

(7) Simple, eleven-segmented antennae, in which the club is formed by the large distal segment; this eleventh segment oviform, truncate at base, acute at apex, bearing short antennal cones.

(8) Head with a pair of large, nude vertexal foveae (each with a diameter of an ocular facet); a conspicuous interantennal impression which tends to be sulciform in the males.

(9) Pronotum with a simple disc, and transversely impressed before the base, this linear impression medianly interrupted by a short but distinctive longitudinal fold which bears a conspicuous median antebasal fovea. Laterally, each side, in the area usually occupied by a lateral antebasal fovea, there is a cluster of coarse punctures which extend to pronotal base, and medianly to central fold, between basal bead and transverse linear impression.

(10) Each elytron with four punctiform foveae. These are coarse pits, in sharp contrast to the rudimentary foveal points of *Scalenarthrus*. Sutural stria entire. Elytra rather coarsely punctate.

(11) Pubescence conspicuous, coarse, straw yellow, sparse and with setae from 0.03 to 0.07 mm. in length.

The Mexican *Mitona* may be separated as follows :

- 1 Anterior femora swollen, flattened beneath ; anterior tibiae laterally dilated, flattened beneath, with this ventral face covered by a pad of short, stiff setae (Pl. V, 4, 5) ; metasternum deeply, broadly concave, with a raised tubercle between the posterior coxae from the posterior metasternal margin MALE *simulatrix* (Sharp).
- Anterior femora and tibiae not conspicuously swollen, the tibiae with, at most, a brush of setae on apical third of ventral face ; metasternum simply, medianly concave to flattened, without a median marginal tubercle 2
- 2 (1) Last sternite produced as a medianly notched shelf which partially overlaps the last tergite MALE *sotoi* new species.
- Last sternite not so modified 3
- 3 (2) Last tergite with a subcircular, granulate-punctate depression FEMALE *simulatrix* (Sharp).
- Last tergite with a small, median, longitudinal tumulus FEMALE *sotoi* new species.

***Mitona simulatrix* (Sharp)**

Bryaxis simulatrix Sharp (1887, p. 31-32) was described on a male specimen from Paraiso, Guatemala. It has not been reported again until the present study. Raffray (1908) placed the species in *Pselaptus*, but this genus lacks any antebasal foveae, and Sharp stated that the pronotal base was produced before the scutellum, and bore a minute median fovea. Park (1942, p. 175) followed Raffray in placing the species in *Pselaptus*, but expressed doubt as to the correctness of the allocation.

The present Mexican series answers to Sharp's inadequate description of *simulatrix*, even to the bizarre anterior legs of the male, and the raised ridge at center of pronotol base which bears the median pronotol fovea. The rediscovered *simulatrix* (Pl. V, 4, 5 ; X, 2, 3, 4, 6, 7) is represented by the following material, taken at light at night, all from Oaxaca, save for one record.

Five males and seven females, January 1, 1932, Tolosa. José Parra. This is a railroad station near the border of Veracruz, at about 50 meters altitude.

One female, May 19, 1932, at Paso Canua on the Rio Papaloapam, near Tuxtepec. A. Dampf.

Seven males and three females, November 9, 1932, at 40 meters, on the humid Pacific coastal plain, in tropical vegetation, near Huehuetan, Chiapas. A. Dampf.

Two males, December 9, 1937, at 100 meters, near Chiltepec. A. Dampf.

Two males, December 12, 1937, up a tributary of the Rio Papaloapam, between Chiltepec and Corriente larga. A. Dampf.

One male, December 15, 1937, at 150 meters, on Rio Cajones, near Rancho Monter. A. Dampf.

Three males and two females, same locality as above, December 16, 1937. A. Dampf.

Two males and one female, December 19, 1937, between 150 and 200 meters, at Finca San Cristobal (same region as preceding record) A. Dampf.

***Mitona sotoi* new species**

Holotype Male. 1.2 mm. long by 0.45 mm. wide. Allotype *female* and *paratypes* of both sexes in the same size range, the maximum of the species being 1.33 mm. long by 0.51 mm. wide. The species has been described in the general diagnosis of the structure of Mexican *Mitona* in preceding pages, the sexes separated from each other, and from those of *simulatrix* in the preceding key, and needs little further description. *Mitona sotoi* pronotum and base of elytra (Pl. X, 2) , distant middle coxae (Pl. X, 3) , diagnostic last (fifth visible) sternite and tergite (Pl. X, 5) of the male sex, and the sternites and last tergite of the female (Pl. X, 6) have been illustrated.

Antennae simple, eleven-segmented, similar in the two sexes ; segments I and II relatively large, slightly longer than wide, subequal in size ; III to VIII much smaller, subequal in length and width, third slightly obtrapezoidal, others submoniliform ; IX very slightly wider

than eighth, transverse-moniliform ; X slightly wider than ninth, trapezoidal ; XI relatively very large, as described previously, forming the antennal club.

Leg simple. Sex differentiated by structure of fifth visible sternite, as noted in key and illustrations.

This species is described on 43 males and 7 females, taken at light at night in Oaxaca, Tabasco and Chiapas, as follows.

One male, December 5, 1930, at 40 meters, in a banana plantation on the Pacific coastal plain, near Huixtla , Chiapas. José Parra.

One male, January 1, 1932, at 50 meters, near Tolosa, Oaxaca. José Parra.

Twelve males and three females, November 9, 1932, at 40 meters, on the Pacific coastal plain, near Huehuetan, Chiapas. A. Dampf.

Six males, December 9, 1937, at 100 meters, near Chiltepec, Oaxaca. A. Dampf.

Six males and two females, December 12, 1937, near Chiltepec, Oaxaca. A. Dampf.

Seven males and two females, December 12, 1937, at Corriente larga, near Chiltepec, Oaxaca. A. Dampf.

Nine males, December 15, 1937, at 150 meters, on shore of the Rio Cajones, near Rancho Monter, Oaxaca. A. Dampf.

One male, January 2, 1939, at 20 meters, near Rio Usumacinto, at Balancán, Tabasco. A. Dampf.

This interesting species is named in honor of Inspector R. Ruiz Soto.

Caligocara new genus

Head with a pair of vertexal foveae between the eyes; ventral **surface** of head medianly, longitudinally carinate ; eleven-segmented, simple antennae ; mentum normally small ; four-segmented maxillary palpi simple, first segment minute, second elongate with slender arcuate basal two-thirds and a gradually inflated apical third ; third segment short, very convex on dorsal and external faces, slightly subangulate on mesial face ; fourth segment longest, base obliquely truncate, apically acute, with a terminal palpal cone.

Pronotum with foveae absent, but with the basal margin scabro-punctate ; basal fifth medianly, longitudinally erected into a sharp carina, or carinoid swelling, this carina may or may not extend to apical margin as a carina or carinoid swelling to bisect the disc.

Each elytron with four distinct foveal pits, an entire sutural stria but no discal stria.

Abdomen with narrow, well defined margins, and with five visible tergites and sternites.

Middle coxae subcontiguous, narrowly separated by an apically acute mesosternal process; posterior coxae widely separated. Legs simple, slender, brachysceline ; simple three-segmented tarsi, first segment small, last two segments relatively long, slender, the third bearing a single tarsal claw.

In *Caligocara* the males have the fifth sternite deeply excavated, and the females have this segment evenly convex.

Genotype : *Caligocara carinifera* new species

KEY TO THE SPECIES OF *CALIGOCARA*

Prosternum with a median, longitudinal carina (Pl. V, 2)
caligocara new species.

Prosternum simple, short, not medianly longitudinally carinated
cristata (Schaufuss) .

Caligocara carinifera new species

Holotype Male. 1.5 mm. long by 0.7 mm. wide, shining light brown, with short (0.03 to 0.02 mm.) and inconspicuous pubescence ; integuments lightly punctulate save for pronotol base.

Head with coarsely faceted, moderate sized eyes as long as the prominent, subparallel tempora ; vertex simply convex, with a pair of nude vertexal foveae on a line through posterior eye margins ; front gently concave between antennal tubercles, and gently declivous beyond inter-antennal rim. Each mandible with a conspicuous, tuberculate boss at base of external face. Maxillary palpi as described for genus. Ventral surface of head with a narrow, high, prominent median longitudinal carina which is strongly elevated medianly; a lateral carina on each side from cervicum to a point beneath the eye, totally absent anteriorly. Antennae long, simple, eleven-segmented ; all segments longer than wide and cylindrical to ovate, save for tenth, which is the shortest segment and is quadrate, and the eleventh segment. Eleventh segment longer than wide, but basally truncate, otherwise fusiform with an acute apex and a deep excavation on apical third of ventral face ; this segment virtually forming the antennal club.

Pronotum lacking all antebasal foveae, bisected by a carinoid ridge from apex to basal bead (as in *Bunoderus*) which gives an uncommon aspect to the prothorax ; basal fifth closely scabropunctate (Pl. V, 3) ; prosternum relatively long, and bisected by a median, longitudinal carina (Pl. V, 2) .

Each elytron with four broad, shallow, subconfluent foveal pits at base, an entire sutural stria, but discal stria wholly absent.

Abdomen with first three segments bearing low margins. Five visible tergites in median length ratio of 3/1/0.8/1.2/2 with first having very inconspicuous basal abdominal carinae one-third the segmental length and separated by slightly less than one-third the segmental width. Fourth tergite vertical; fifth very large, subgranulate, ventral in position, bearing a prominent and rounded tumulus in apical third from which arises a fan of apically directed setae.

Five sternites visible with proportions as illustrated (Pl. V, 1); last deeply excavated, with an oblique, laminoid tubercle at center of apical margin, more or less obscured by the long setae from the tumulus of the last tergite (Pl. V, 1).

Metasternum and last two pair of coxae illustrated (Pl. V, 1), the dense mat of short, thick, silvery pubescence covering most of the broadly concave metasternum. Legs long, slender and simple.

Allotype female as for holotype, save for the metasternum and abdomen. The metasternum is evenly convex and normally pubescent (Pl. V, 1). The last tergite is normally small, transversely subovate, simple; the sternites simply convex (Pl. V, 1).

This species is described on five specimens, three males and two females (holotype, allotype and three paratypes), taken by **A. Dampf at light at night**, August 22, 1933, in an arid region in the southern part of Michoacán, at Huetamo. The type locality was at 350 meters elevation, near the adjoining state of Guerrero in the region drained by the Rio Balsas, and at present places the species in Smith's neotropical Lower Balsan province.

***Caligocara cristata* (Schaufuss)**

This species was insufficiently described by Schaufuss (1879, p. 14) as *Bryaxis cristata*, with the locality simply "Mexico." Under this name it was listed for Mexico by Sharp (1887, p. 30) but only on the basis of the original record. Raffray (1904, p. 209; 1908, p. 210) placed the species in *Pselaptus* and this course was adopted by Park (1942, p. 175; 1943, p. 208). In these later accounts the species was not rediscovered and no definite locality was cited, beyond the original Schaufuss datum.

In the Dampf material a series of specimens agrees closely with the original description. In previous generic keys these beetles would run to *Xybarida* because of their subcontiguous middle coxae, and not to *Pselaptus* and its allies. The anatomy of the pronotum precludes *Xybarida*, but is very close to that of *Caligocara*.

These specimens follow the description of *carinifera*, save for the following specific differences. (1) Ventral surface with complete lateral carinae, and ocular carinae as noted for *Dranisaxa gloydi*. (2) Median, longitudinal pronotal carina extending from basal bead through basal fifth, the disc simply convex. (3) Prosternum short, simple, uncarinated. (4) Fifth tergite lacking median, apical tumulus, and with a medianly notched apical margin, in the male. (5) Excavation of venter involving fourth and fifth sternites, and lacking the apical lamina (not to be confused with partial exsertion of aedeagus) in the male sex.

This species is slightly smaller than *carinifera*, appears to be more abundant, and to have a wider distribution. The series under study consists of four males and seven females, taken at light at night, as follows.

One female, November 6, 1931, at the Maravillas coffee plantation, Chiapas, in virgin forest on the Sierra Madre de Sur, 660 meters elevation. José Parra.

One male, May 17, 1932, at the Las Carolinas banana plantation, on the Rio Papaloapam, near Tuxtepec, Oaxaca, at 55 meters. A. Dampf.

Two females, August 6, 1932, on the Atlantic coastal plain, at Carrizal, Veracruz (between Veracruz and Jalapa). R. Ruiz Soto.

Three males and three females, November 9, 1932, at 40 meters, in humid area of Pacific coastal plain, with tropical vegetation, near Huehuetan, Chiapas. A. Dampf.

One female, December 12, 1937, found upriver, between Chiltepec and Corriente larga, Oaxaca. A. Dampf.

The orientation of *Caligocara* in respect to its allied genera is difficult, and exemplifies the taxonomic confusion which exists in this part of the tribe. The general structure of *Caligocara* allies it to *Scalenarthrus* and *Pselaptus*, rather than to *Xybarida*. The last named genus, however, has subcontiguous middle coxae, whereas the first two genera have distant middle coxae. On this basis, the new genus runs to the vicinity of *Xybarida*, but since the degree of separation of these coxae is much greater in *Scalenarthrus* than in *Pselaptus*, with a correlated and marked difference in the amount of acumination of the

♂
easily applied.

When the types of the numerous species of Neotropical *Xybarida*, *Xybaris*, *Mitona*, *Cryphorhinula*¹, *Caligocara*, *Scalenarthrus*, and *Pselaptus* can be examined and compared, and the types of the several species

¹*Cryphorhinula* (Schaufuss, 1887, p. 150) is the first spelling of the genus, as correctly noted by Hetschko (1913). Not *Cryptorhinula* Schaufuss, 1887, p. 163; Raffray, 1904, 1908; Park, 1942, *et cetera*.

of "*Bryaxis*" described by Sharp and Schaufuss integrated in the modern generic arrangement, real progress will be made. For example, some of the Neotropical species of *Scalenarthrus* and of *Pselaptus* may not be congeneric with the Nearctic genotypes of these two genera. A case in point is *Pselaptus batrisoides* Sharp (1887, p. 33, Pl. I, fig. 17). This may belong in *Scalenarthrus* of LeConte (1880), or *Pselaptus* of LeConte (1880) ; it may belong in either of these genera as diagnosed by Raffray (1908), but such a designation may not be congeneric with the original diagnosis of LeConte. It is possible that my *Scalenarthrus diplorachis* (Park, 1943, p. 189-191, Pl. I, fig. 6) of Veracruz is a synonym of Sharp's *batrisoides* but no final decision can be made on this, and other points, at this time.

Scalenarthrus parrai new species

Holotype Male. 1.5 mm. long by 0.5 mm. wide, moderately dull, light brown, subpunctulate, with very short (0.01-0.02 mm.) and inconspicuous pubescence.

Head with coarsely faceted eyes of moderate size, very slightly longer than tempora; vertex evenly convex, with a pair of minute, punctiform vertexal foveae, mutually widely separated, on a line through posterior third of eyes ; simple front flattened between antennal insertions, with no trace of concavity or transverse impression, the frontoclypeal declivity simple. Mandibles each with a prominent tuberculate boss at external base. Ventral surface of head with the carinal pattern of *S. undecimtypus*, each lateral carina strongly arcuate to give a sharply angulate genal outline. Maxillary palpi as for genus. Antennae simple and short ; segments **I** and **II** elongate and subequal ; **III** to **VIII** much smaller, subequal, third obconical, others subquadrate ; **IX** elongate, obtrapezoidal ; **X** transverse ; **XI** truncate at base, apically subacute, elongate but slightly flattened dorsoventrally, as long as preceding four segments **united, virtually forming the club, with the usual** apicoventral excavation.

Pronotum simple, with antebasal foveae absent, their places **occupied** by almost undiscernible inequalities of the surface under high magnification. Prosternum not medianly, longitudinally carinated.

Elytra simple, with entire sutural stria, no discal stria; each elytron with four shallow, inconspicuous, basal foveal pits.

Five visible tergites in median length ratio of 2.7/1.3/1.1/1.1/2 with first three bearing narrow but sharp margins ; first tergite bearing a pair of basal discal carinae one-fifth the segmental length and separated by one-fourth the segmental width. These carinae are very low and inconspicuous; in contrast to the well-developed carinae of *subcarinatus*,

they appear rudimentary; in contrast to the condition in *diplorachis*, where these carinae are totally absent, the carinae are evident. The fifth tergite is almost semicircular, with the apical margin medianly produced and bearing a conspicuous median, longitudinal tumulus for apical third of length.

Five visible sternites in median length ratio of 1.6/.3/.3/.3/.8 with the first sternite simple, without trace of a median longitudinal carina. Fifth sternite medianly concave, with each apical corner of this gentle concavity flanked by a setose, cuspid tumulus.

Middle coxae distant, the mesosternal and metasternal processes truncate and meeting between them ; posterior coxae distant. Metasternum broadly, shallowly concave. Legs slender, simple save that the posterior femora and tibiae are lateromesially arcuate ; tarsi as for tribe .

Allotype female as for holotype save that the metasternum is evenly convex and the fifth sternite is evenly convex and the fifth tergite is smaller, and lacks the apical tumulus.

Described on thirteen males and fourteen females (holotype, allotype and twenty-five paratypes). This species is named in honor of Inspector José Parra, of the Mexican Department of Public Health.

I am not entirely satisfied with the generic allocation of this species. The distant middle coxae, separated by a flat and truncate mesosternal process, and the four foveal pits at base of each elytron, are typical of *Scalenarthrus*. On the other hand, the total lack of a transverse sulcus or impression separating front -from vertex, is not typical of Neotropical *Scalenarthrus*. If this species is a member of this genus, and other related genera appear much less acceptable vehicles, then it is a member of Group I. Within this group, its only ally is *subcarinatus* Raffray. This latter species is readily separated as it has an entire transverse frontal impression, and the first sternite bears a median, longitudinal carina.

The specimens were collected by Dr. C. Bolivar, at light at night, in semitropical vegetation at 480 meters elevation, February 19, 1941, at Purificación, in the southwestern corner of Jalisco.

***Scalenarthrus concavus* Fletcher (Pl. I, 10)**

Described on the male sex only (1928, p. 207) from Blue Creek, British Honduras and Buena Esperanza, Lake Petén, Guatemala. The present collection contained two males and five females collected by A. Dampf, June 7, 1937, at 100 meters, near Loma Bonita, Oaxaca. This Mexican record extends the range of the species northward. This locality is in the Atlantic drainage of the Bahía de Campeche, on the Isthmian railway.

The female sex, determined by dissection, agrees with the male save that (1) the frontal sulcus is less well developed ; (2) the integument is less shining; (3) the sternites are simply, evenly convex.

Scalenarthrus cavicornis (Raffray) (Pl. I, 4)

Raffray described this species (1896, p. 258, Pl. 11, fig. 10) in the genus *Eupines*, and later (1904, 1908) placed it in its present genus. A single specimen, from "Mexican tobacco," served as the previous record.

In the material at hand there are eleven males and two females, all taken by A. Dampf at light at night, in Oaxaca.

One male, February 13, 1932, on the Papaloapam river, near Tuxtepec, between 8:00 P. M. and midnight.

One male, February 15, 1932, at 200 meters, above the Rio Santo Domingo, at Paso de Bodegas, near Ojitlán.

One male, March 3, 1932, on a tributary of the Papaloapam, near Chiltepec.

Seven males and two females, April 7, 1932, 50 meters, on the Papaloapam near Tuxtepec.

One male, May 19, 1932, at Paso Canua on the Papaloapam, near Tuxtepec.

Scalenarthrus globosus Fletcher (Pl. III, 6)

Fletcher (1928, p. 209) described this species on two males, one from near San Francisco, Lake Petén, Guatemala; the other from Blue Creek, on the Rio Azul, British Honduras.

There are thirteen males and eleven females of the species *in* the Mexican material under study.

Nine males and four females, October 27, 1930, at light at night in the sugar cane plantation of Elias Calles, 80 meters, at El Mante, Tamaulipas. A. Dampf.

Two males, June 21, 1938, at 20 meters, near Reforma, Tabasco. Cesar Ocampo.

One male and one female, July, 1938, at the village Emiliano Zapata, on the shore of the Rio Usumacinto, Tabasco. Cesar Ocampo.,

One male and six females, January 1, 1939, at Pocvicuc, Tabasco. A. Dampf.

In this Mexican series there is some variation in the vertexal foveae, from circular and shallow pits to almost absent.

Scalenarthrus inflatus Fletcher (Pl. I, 7)

This unusual species was described on a single male at Veracruz, Veracruz (1928, p. 210, Pl. 12, fig. 4)

Up to now, fifty-six males and a female have been found in the Dampf material. All were taken at light at night, over a wide geographic area as follows.

Oaxaca: Tolosa, January 1, 1932, José Parra.

San Cristobal, December 13, 1937, A. Dampf. This is a small Indian village on the Gulf coastal plain of Oaxaca and Veracruz, at about 150 meters elevation.

Rancho Monter, on the Rio Cajones, at 150. meters, December 15 and 16, 1937, A. Dampf.

Chiapas Huixtla, on the Pacific coastal plain, at 50 meters, December 5, 1930, José Parra.

La Florida coffee plantation, about 700 meters, in a mountainous area covered with virgin forest, May, 1931, José Parra.

Maravillas coffee plantation, in the Sierra Madre de Sur, at 660 meters, November 6, 1932, José Parra.

San Antonio Nexapa coffee plantation, in the Sierra Madre de Sur, at least 500 meters, November 20, 1931, José Parra.

Mazatan, 35 meters, November 12, 1932, A. Dampf.

Vergel coffee plantation, 700 meters, on the valley slopes of the Rio Huixtla, in the Sierra Madre de Sur, May 15 to 22, 1935, A. Dampf.

Lubeca coffee plantation, Sierra Made de Sur, 850 meters, March 10, 1938, A. Dampf.

Esperanza coffee plantation, Sierra Madre de Sur, 700 meters, in area of virgin forest, June 8, 13, and 30, 1938, Dr. R. Nettel ; February 13 to 19, April 23 to 30, June 4, 5, 9, 18, and 28, 1939, Dr. R. Nettel.

Tabasco: Pocvicuc, on the Rio Usumacinto, at 25 meters, A. Dampf.

Guatemala: Retalhuleu, at 250 meters, in tropical vegetation near the Xulé brook, November 23, 1932, A. Dampf.

***Cryphorhinula oedipus* (Sharp)**

This species was described (1887, p. 33) on a male from Guatemala, as *Bryaxis oedipus*, and was assigned with doubt to *Cryphorhinula* by Raffray (1908, p. 215) and Park (1942, p. 180). The present material agrees well with Sharp's inadequate description, if the assumption is made that the describer did not note the very abnormal character of the last antennal segment.

The series under study is typical *Cryphorhinula*, and was taken at lights at night in Oaxaca: one male, December 13, 1937, at a small Indian village, San Cristobal, at 150 meters, in the Gulf coastal plain of Oaxaca and Veracruz, by A. Dampf; two males, December 14, 1937, and one male, December 15, 1937, at Rancho Monter, on the Rio Cajones, at 150 meters elevation, by A. Dampf.

Each elytron bears two deep foveae, an entire sutural stria, and a weak, very short, striaform intrahumeral impression. The anterior tarsi (Pl. VI, 4, 5), middle coxae (Pl. VI, 6) and the head and an antenna (Pl. VI, 7) are illustrated.

***Cryphorhinula trimioides* (Sharp)**

This species was also described (1887, p. 32, Pl. .1, fig. 16) in *Bryaxis*, and doubtfully assigned to *Cryphorhinula* by Raffray (1908) and Park (1942) as noted for *oedipus*. As in this last species, the present series agrees well with the original description, if the same proviso is noted for the last antennal segment. The specimens under study, all from light at night, in Oaxaca, have the male sex provided with distinctive antennae (Pl. I, 1) and anterior tarsi (Pl. I, 2, 3). Elytra as in *oedipus*.

This Oaxacan material consists of twelve males and fourteen females as follows.

Two males and two females, March 3, 1932, at about 100 meters, on a tributary of the Rio Papaloapam, at Chiltepec. A. Dampf.

Two males and five females, January 1, 1932, at about 50 meters, near Tolosa, near the border of Veracruz. Jose Parrá.

Four males and six females, April 7, 1932, at 50 meters, near Tuxtepec, on the Rio Papaloapam. A. Dampf.

One male, April 11, 1932, at the Los Pochotes banana plantation, on the Rio Santo Domingo, near Tuxtepec, about 80 meters elevation. A. Dampf.

Two males, May 19, 1932, at Paso Canua, on the Papaloapam, near Tuxtepec. A. Dampf.

One male and one female, December 9, 1937, near 100 meters elevation, near Chiltepec. A. Dampf.

BATRISINI

***Arthmius plicicollis* (Reitter)**

One male, December 4, 1925, at 120 meters elevation, at light at night, on the shore of Lake Petén, at Ciudad Flores, Guatemala. A. Dampf.

***Arthmius bolivari* new species**

Type Male. 1.41 mm. long by 0.53 mm. wide, shining reddish brown with paler appendages and pubescence, the latter rather long, sparse and conspicuous against the almost impunctate integument.

Head, including prominent coarsely faceted eyes as long as tempora, wider than pronotum ; vertex convex with a pair of deep vertexal foveae on a line through posterior fourth of eyes; a distinct transverse impression, with a distinct fovea at either end, between antennal tubercles, behind the raised frontal margin ; frontoclypeus simple and evenly declivous.

Antennae without any geniculation, but abnormal ; segment **I** quadrate ; **II** smaller, slightly longer than wide ; **III** still smaller, subobconical, slightly longer than wide ; **IV** and **V** abnormal, subequal, larger than the adjacent segments, slightly longer than wide, irregularly oval, with their dorsal surfaces elevated and obliquely flattened, these surfaces bearing numerous, short, thick, silvery setae ; **VI** and **VII** smaller, subequal, subovate ; **VIII** small, subquadrate, as long as third and as wide as seventh ; club of next three segments, **IX** and **X** with the same outline, the body of the segments slightly transverse, ninth distinctly larger than eighth, tenth larger than ninth, **XI** longer than preceding two united, of usual shape, with acute apex and truncate base.

Pronotum longer than wide ; disc slightly longitudinally tumid, with a distinct foveoid impression each side near apical margin ; basal fourth with the usual deep, transverse sulcus connecting the two deep antebasal foveae ; basal bead strong ; lateral margins entire.

Each elytron with three deep, nude basal foveae and entire sutural stria ; no discal stria.

Abdomen with marginal carinae of the genus, nearly as wide as the elytra, and with an acute, conical posterior end. Five visible tergites in median length ratio of 4/0.8/0.7/2/1.3 with last two subvertical. Six visible sternites in median length ratio of 2/0.2/0.2/0.2/2.5/0.7. First sternite notable, medianly flattened, with a low tubercle at either side of flattened area at apical two-thirds ; a fringe of posteriorly directed setae in an arcuate row between tubercles, and from each tubercle a cluster of longer setae which extend out over second sternite. Fifth sternite deeply and broadly concave. Sixth sternite small, asymmetrically, transversely oval.

Metasternum with a narrow, median, longitudinal sulcus which ends in a small foveoid depression before reaching apical metasternal margin.

Anterior tibiae abnormal, medianly inflated, with the anterodorsal face medianly excavated. This excavation oval, glabrous, with two associated structures: a short, laminoid cusp which overhangs the excavation

at its anterodorsal angle and a short, erect, columnar tubercle at the posteroventral angle of the excavation. Intermediate tibiae each with a long, arcuate spur at apex of ventral face. Tarsi as for genus.

This distinctive species is named in honor of Dr. C. Bolivar. It is based on four males, all taken at light at night, in Chiapas. One male at 430 meters, November 13, 1930, between 6:45 and 9:00 P.M., at the El Zapote coffee plantation, in virgin forest on the slopes of the Sierra Madre de Sur, by A. Dampf; one male, October 7, 1939, and two males, October 8, 1939, at 700 meters, at the Esperanza coffee plantation, by Dr. R. Nettel.

The holotype and one paratype have the pronotal disc longitudinally tumid, with just a suggestion of a carinoid crest. The other two paratypes have the disc bisected by a fine carinal crest. The carinal crest is typical of Group I; the convex disc, with antennae and legs abnormal in the male sex, is typical of Group III. The new species has no allies in Group I, but in Group III *bolivari* is most closely allied with *subfusius* Fletcher (1930) of Veracruz. These two species are very distinct from each other. Thus, *subfusius* has an entirely different pattern of antennal abnormality, a different vertex, and differently modified anterior tibiae.

***Arthmius curvicornis* (Schaufuss)**

Batrissus curvicornis Schaufuss (1872, p. 286), based on a single male from Yucatan, and reported (Sharp, 1887, p. 11) from Cordoba, Veracruz, was assigned to Group III of *Arthmius* (Raffray, 1897, 1904, 1908; Park, 1942, p. 230, 1943, p. 209).

This is one of the better known species of the genus. In the Dampf material examined, it is represented by ten males from the states of Morelos, Oaxaca, Chiapas and Tabasco. The abnormality of the male antennae (Park, 1943, p. 196) is subject to a considerable amount of variation within the limits of the species population, and the range of this variation is illustrated (Pl. IV, 3; VI, 3). The specimens were taken at light at night as follows.

Morelos: One male, April 21, 1930, at 1540 meters, in semitropical vegetation, near Cuernavaca. A. Dampf.

Oaxaca: One male, April 7, 1932, at 50 meters, near Tuxtepec. A. Dampf. One male, December 13, 1937, at 150 meters, near San Cristobal, in the Gulf coastal plain of Oaxaca and Veracruz. A. Dampf. Three males, with data as above, in a pasture near the village. One male, December 14, 1937, at 150 meters, near Rancho Monter, on the Rio Cajones. A. Dampf.

Tabasco: One male, June 16, 1928, at 10 meters, near Villahermosa, on the Rio Grijalva. A. Dampf. One male, June 21, 1938, at 20 meters, in virgin forest near Reforma. A. Dampf.

Chiapas: One male, in May, 1938, at 20 meters, near Sanctumpó on the Rio Usumacinto, in virgin forest bordering Tabasco.

This is a widely distributed neotropical species. It is known from at least four states in recent years, in addition to the older records from Yucatan and Veracruz. It has an altitude range of from near sea level to some 4500 feet, and if a map is consulted it will be seen that its known distribution covers the Atlantic drainage of the Gulf of Mexico, with the exception of the Morelos record. In general, the species is known from three adjacent neotropical provinces of Smith (1940), which border the Bahia de Campeche, namely Veracruzian, Petén, and Yucatecan.

Arthmius geniculatus (Sharp)

This is a well defined, Group III species described in *Batrissus* by Sharp (1887, p. 11), from both sexes, from Jalapa, Veracruz. It was later recorded (Park, 1943, p. 192) from Tamazunchale, San Louis Potosi and Jalapa, Veracruz.

In the Dampf material there is a male taken at light, on the night of August 6, 1932 by Inspector R. Ruiz Soto, at Carrizal, Veracruz. This locality is in the Gulf coastal plain, on a railway between the city of Veracruz and Jalapa. This is another Veracruzian species population.

Arthmius simplicior Raffray

This species, also of Group III, was described (1897, p. 466, 500) on a male from "Yucatan." Although not reported again, up to the present, it has been found often in the Dampf collection as follows.

Veracruz: One male, between 200 and 500 meters, July 3, 1932, at Monte Alto, near the border of Oaxaca. A. Dampf.

Oaxaca: One male, February 13, 1932, at 50 meters, in the Gulf coastal plain near Tuxtepec, on the high banks of the Rio Papaloapam. A. Dampf. One male, March 3, 1932, over 100 meters, near Chiltepec, on a tributary of the Papaloapam. A. Dampf. One male, May 17, 1932, at 55 meters, on the Las Carolinas banana plantation, near Tuxtepec, on the Papaloapam. A. Dampf. Three males, May 19, 1932, at Paso Canua, near Tuxtepec, on the Papaloapam. Dampf.

Chiapas: One male, on the Atlantic side of the state, near the border of Tabasco, in virgin forest near Sanctumpó, about 100 meters. Cesar Ocampo.

It will be noted that this species is distributed in the two adjacent, neotropical provinces (Veracruzian and Petén) mentioned previously. Its range is similar to that of *curvicornis*, with which it was originally confused, until differentiated by Raffray in 1897.

Two of the males of *simplicior* have the aedeagus partially exserted. In these the sixth sternite is retracted to the right, so that the species belongs to the dextral group (Park, 1942).

***Arthmius latipes* Raffray**

This species was described (1897, p. 475) on a male from "Mexico." Fortunately it was very abundant in the collection under study, and a more accurate distribution may be assigned. There were twenty-six males, all taken by A. Dampf at light at night, and all in Oaxaca, as follows.

One, February 15, 1932, 200 meters, at Paso de Bodegas, on the Rio Santo Domingo, near Ojitlán.

One, March 3, 1932, on a tributary of the Rio Papaloapam, near Chiltepec. Elevation above **100** meters.

One, December 9, 1937, in tropical vegetation on the shores of the tributary noted above, near Chiltepec, at 100 meters.

Four, December 13, 1937, at San Cristobal, 150 meters elevation, in the Gulf coastal plain.

Four, December 14, 1937, at 150 meters, on the Rio Cajones, near Rancho Monter.

Six, December 15, 1937, locality as above.

Nine, December 16, 1937, locality as above.

This species is known, so far, from the neotropical Veracruzian province.

***Arthmius dampfi* new species**

Type Male. 1.9 mm. long by 0.67 mm. wide. Pubescence sparse, rather long (0.05 to 0.07 mm.), flavous and conspicuous against the body. Integument with an uncommon color pattern: head, prothorax, sterna and abdomen shining jet black to deep **blackish brown**; **elytra** with disc bright orange red, with basal **and apical areas dusky reddish brown**; mouth parts yellow; legs and antennae **yellowish brown**.

Head as wide through the eyes as long (labrum to cervicum). Eyes one third longer than tempora, with rather small facets. Vertex convex, with a pair of large, deep vertexal foveae between **the eyes**. **An indistinct** oblique impression from each fovea to a **point just mesiad of, each** antennal tubercle, these impressions separated by **the convex fronto-**

vertex, and with no trace of an anterior pair of foveae. Vertex medianly impressed between the vertexal foveae. Frontoclypeus simply, strongly convex and regularly declivous.

Antennae simple ; segment I subquadrate dorsally, elongate from a mesial view ; II smaller, subquadrate, ovoidal ; III narrower, elongate ; IV to VII subequal, suboval, wider than third ; VIII similar in shape but slightly smaller ; club of last three segments, IX and X of similar shape, subequal, trapezoidal, larger than preceding segments, XI of usual shape, longer than preceding two segments united, but shorter than the preceding three united.

Pronotum slightly narrower than head, slightly longer than wide, of usual shape and structure for its group. Elytra with humeri obtusely prominent ; each elytron with three deep basal foveae, entire sutural stria; no discal stria, but a faint intrahumeral impression.

Five visible tergites in median length ratio of 5/1/1/3/1 with marginal carinal pattern of genus ; abdomen with conical outline from above ; first tergite with a pair of stout basal carinae one-third the segmental length and separated by one-half the segmental width.

Six visible sternites in median length ratio of 2.5/0.4/0.3/0.2/4/1.7 with the first sternite bearing a stout, median, longitudinal carina. Fifth sternite deeply and conspicuously bifurcated from center to apical margin, and medianly longitudinally sulcate from center to basal margin. Sixth sternite in the shape of a wedge, coadapted to fill the bifurcation of the preceding sternite.

Metasternum as for *bolivari*.

Legs with femora, coxae, and trochanters simple and unarmed. Anterior tibiae abnormal: inflated in median third of length, this inflation evenly convex on dorsal and lateral faces of tibia, but abruptly narrowed and compressed on mesial face to form a short, strongly rounded carinoid ridge. Intermediate tibiae with the usual arcuate spur at apex of ventral face. Tarsi as for genus.

This species, named for Dr. Alfons Dampf, is a member of Group V. It was collected by him on June 29, 1941, by a sweeping net, in the grass of Chapultepec Park, Mexico City, at an altitude of 2260 meters.

It has but one close ally known. This is *simplicicornis* (Sharp), described on a male from near Guatemala City, Guatemala (1887, p. 12, Pl. I, fig. 6) . Sharp's inadequate description was materially amplified by Raffray (1897, p. 474-475) . These published data give *simplicicornis* a flat vertex bearing four free, equal foveae ; anterior tibiae bearing a median, pointed dilation ; fifth sternite transverse, wholly flattened, among other differences.

PSELAPHINI

Pselaphellus mexicanus new species

Holotype Male. 1.52 mm. long by 0.56 mm. wide. Shining light brown. Pubescence in the form of thin, flavous scales, these being especially abundant as follows: two patches on the vertex between the eyes, two patches on the ventral surface of the head between the eyes, basal margin of pronotum, prosternum, mesosternum, apical margin of elytra, and basal portion of first visible sternite.

Head 35 per cent longer (labrum to occiput) than wide through the eyes. Eyes coarsely faceted, prominent, as long as tempora. Vertex elongate, deeply concave medianly between eyes, the concavity filled with pubescence as noted; anterior of eyes the vertex strongly convex to frontal margin; frontal margin medianly, longitudinally impressed between antennal insertions; front concave to the laminoid, transverse frontoclypeal ridge; labrum transverse, shelf-like, at right angles to clypeus; mandibles small, simple.

Maxillary palpi four-segmented (P1. **I, 6**); segmented I short and cylindrical; II very long, slightly arcuate, cylindrical to the slightly inflated apical end; **III** short, subtriangular; **IV** longest segment, also slightly arcuate and lengthily cylindrical between slightly inflated basal end and the apical inflation; this apical inflation of the last segment distinctly less than one-third the segmental length, oval from a dorsal view, asymmetrically acute **from a lateral view, with** an entire longitudinal sulcus.

Antennae simple, eleven-segmented; segment **I** twice as long as wide, as long as the second and third segments united; **II** smaller, elongate oval; **III** to **VIII** smaller, subequal in width, third slightly longer than wide, subobconical, others quadrate moniliform; distinct club of last three segments, IX larger than eighth and elongate oval, X longer and slightly wider than ninth and elongate oval, **XI** very elongate oval from a dorsal view and almost as long as the preceding six segments united.

Pronotum simple, with a narrow very convex disc; as long as wide, shorter than head.

Elytra as long (including apical pubescence) as wide, rounded triangular; each elytron with two basal foveae (hidden by basal pubescence of pronotum), a deep and entire sutural stria, and a deep discal stria one-half the total elytral length.

Membranous metathoracic wings long (1.9 mm.) and well-developed, with their ventral, (mesial) margins fringed with a single row of long alar setae (0.1 mm. long).

Abdomen 25 per cent shorter than elytra, with strong, flat margins. Five visible tergites in median length ratio of 5/0.7/0.5/1.2/1.5 with the last two subvertical. First visible sternite nearly twice as long as remaining sternites united ; this first sternite medianly flattened and bearing an ovate, longitudinal depression at center.

Metasternum strongly tumid medianly, with the posterior face of the tumidity triangularly flattened. Legs typically macrosceline (Pl. I, 5), unarmed ; tarsi as for tribe.

Allotype female as for holotype, save that (1) the first visible sternite is evenly convex, and (2) the metasternum is evenly tumid on all faces.

This species is described on four males and nine females, taken at light at night, as follows.

Veracruz: One male (holotype) and one female (allotype), October 31, 1934, at 50 meters elevation, in tropical vegetation along the Rio Tonto, at Vista Hermosa. This locality is on the Isthmian Railway between Tierra Blanca and Tuxtepec, Oaxaca, in Atlantic drainage. A. Dampf.

Tabasco: One female at 25 meters, in July, 1938, along the shore of the Rio Usumacinto, at Pocvicuc. Cesar Ocampo.

Two males by the Rio Usumacinto, in July, 1938, at the village Emiliano Zapata. Cesar Ocampo.

One male and two females at 25 meters, December 31, 1938, at Pocvicuc. A. Dampf.

One female at 20 meters, January 2, 1939, at Balancán, on the Rio Usumacinto. A. Dampf.

Four females at about 25 meters, January 1, 1939, at Pocvicuc. A. Dampf.

This new species is known at present from very low elevations in the two contiguous Atlantic neotropical provinces: Veracruzian and Petén. Up to now the genus has not been recorded north of Guatemala.

Zoögeographically and taxonomically, the closest ally is *Pselaphellus longiceps* (Sharp). Sharp (1887, p. 34, Pl. I, fig. 18) described his species on a single, doubtfully female, specimen from Paso Antonio, Guatemala. The description and figure of *longiceps* exclude identity of *mexicanus* with Sharp's species, although I have not seen the type specimen. For example, *longiceps* (1) is materially larger, being 2.5 mm. long; (2) the abdomen has a short first tergite ; (3) the first antennal segment is very long, as long as the next four segments united; (4) the apical dilation of the fourth segment of the maxillary palpi is relatively large, being one-half the segmental length.

TYRINI

Hamotus (Hamotus) singularis Reitter

This species was described in 1882 from "Mexico," and was recorded by Sharp (1887) from Cordoba, Veracruz ; Guatemala ; and Panama. It has a wide range. The present material serves to close the geographic gap between Veracruz and Guatemala, as follows.

Two males taken at light at night, at 25 meters in July, 1938, along the shore of the Rio Usumacinto, at Pocvicuc, Tabasco. Cesar Ocampo.

One male, November 8, 1932, at light at night, at Huehuetan, Chiapas, in the Gulf drainage, at 40 meters elevation. A. Dampf.

Hamotus (Hamotoides) nodicollis Raffray

This species was originally described as coming from "Mexico." In the collection under study, there is one male *nodicollis* taken at light at night, August 14, 1927, by Dr. Dampf in the Yaqui Valley of Sonora. The specimen was captured between 10:45 P.M. and midnight, in a stretch of partially inundated desert covered with the original vegetation, e.g. cacti. It is a well marked species, the male sex having each anterior trochanter armed with a strong tooth.

Phalepsus neotropicus new species

Holotype Male. 1.6 mm. long by 0.7 mm. wide. General aspect oviform, anteriorly attenuated, posteriorly **inflated**. Uniform dark reddish brown with tarsi and maxillary palpi light yellowish brown. Body covered with yellowish brown, abundant, subappressed setae of moderate size (0.04 to 0.05 mm. long) . Labrum and maxillary palpi glabrous; rest of body with a dull shine as a consequence of the rough granulatoreticulate surface ; pronotum also covered with shallow, dense punctures ; elytra also punctate but the punctures much coarser and more sparse.

Head longer than wide, narrowing regularly and gradually **from the eyes to the antennae**, with coarsely faceted eyes twice the length of the relatively short tempora. A pair of minute vertexal foveae between the eyes, obscured by the surface structure; a long **vertexofrontal rostrum which is not tuberculated laterally, and with only slightly raised antennal insertions ; this rostrum with the frontal margin medianly indented, and the indentation continued a short distance posteriorly as a median longitudinal sulcoid impression. Front below this margin short and posteriorly oblique to join the long, convex**

clypeus which is almost parallel with the vertex ; labrum small ; mandibles thick, strongly arcuate and simple. Ventral surface of head strongly tricarinate.

Maxillary palpi four-segmented, very long (0.6 mm.), about 81 per cent of the total antennal length when extended, with shape and proportions as illustrated (PI. II, 12).

Antennae simple, eleven-segmented (0.74 mm. long) ; segment I elongate cylindrical ; II smaller, elongate subcylindrical ; III smaller than second, elongate subobconical ; IV to VIII as wide as third, subequal, quadrate moniliform ; IX only slightly larger than eighth and very slightly wider than long, submoniliform ; club two-segmented, X abruptly larger than ninth, subquadrate ; XI as long as preceding four segments united.

Pronotum widest at base where it is as wide as long, as wide as head including eyes ; disc progressively convex to basal two-fifths ; an arcuate transverse sulcus at basal sixth, ending each side in an oblique, large, oval foveoid impression.

Elytra with obtusely prominent, oblique humeri ; each elytron with two basal foveae, and with a weakly defined and oblique discal impression in basal third, but with sutural stria absent.

Abdomen with narrow but well-defined margins on first three tergites. Five visible tergites in median length ratio of 2/1.5/1/2/1.2 with last two subvertical.

Six visible sternites medianly excavated to give a longitudinally concave profile, with articulations obscured by the pubescence, in median length ratio of 0.8/1.5/0.4/0.6/0.8/0.8.

Metasternum complex ; roughly granulate medianly where it is broadly concave ; lateral walls of concavity extended to form flat tubercles with blackened carinate margins ; this margin each side is extended obliquely mesiad to form a secondary, triangular cusp ; posterior metasternal margin deeply notched.

Legs unarmed, with moderately inflated femora about three times as wide as their respective tibiae ; tarsi as for genus (Pl. II, 13) with the two tarsal claws very unequal.

Aedeagus (from two paratypes) large (0.321 mm. long by 0.180 mm. wide), typically tyrine, and relatively primitive with almost no bilateral asymmetry (PI. X, 1), elongate oval with two subovate diaphragms in the median lobe, the apical stylus glabrous, recurved and with a slightly biconvex, truncate, laminoid margin.

Membranous metathoracic wings well-developed, 1.80 mm. long.

Allotype Female. As for holotype, the secondary sexual differences being very small, save that (1) the metasternum is not quite as deeply

concave, with the secondary triangular cusp obsolete, (2) the sternites simply flattened medianly, straight in profile, and (3) femora more slender.

Described on thirty specimens taken at light at night as follows.

Oaxaca: One male and one female, at about 100 meters, June 7, 1937, at Loma Bonita. This locality is in the Gulf coastal plain in open grassland largely cleared for pineapple cultivation. A. Dampf.

Tabasco: One female, at 10 meters, June 16, 1928, near Villahermosa, on the Rio Grijalva in dense bush. A. Dampf.

Two males and one female, at about 25 meters in July, 1938, near the village Emiliano Zapata, on the Rio Usumacinto. Cesar Ocampo.

One female, December 31, 1938, six males and seventeen females, January 1, 1939, including holotype and allotype, at Pocvicuc, on the Rio Usumacinto at about 25 meters elevation. A. Dampf.

This species is at present known from the Veracruzian and Petén biotic provinces, on the Atlantic side of Mexico. This is the first time that *Phalepsus* has been reported north of the Amazon drainage. The new species is structurally closest to *fluminicola* (Schaufuss) from which it differs in antennae and abdomen, among other details.

***Phalepsus guatemalensis* new species**

Type Male. Generally similar to *neotropicus* as described, with the following differences. (1) Much smaller (1.37 mm. long by 0.6 mm. wide). (2) Integument much more shining, with the granulate reticulate sculpture very reduced, and the elytral punctures sparse, shallow and subobsolete. (3) Metasternum quite different, the median granulated area between carinoid walls flattened and very transverse (twice as wide as long), with the secondary triangular cusp absent. (4) Sternites different, in median length ratio of 0.5/1.5/1/0.2/0.6/0.4; the second sternite is erected apically and the third sternite is erected basally to form, together, a distinctive median tumidity. (5) Posterior femora abnormal, each with an oblique, deep oval fossa on external face from dorsal to ventral margin.

This small species is described on one male, the type, taken by A. Dampf at 250 meters, in tropical vegetation near Retalhuleu, Guatemala, at light on the night of November 23, 1932. This locality is on the Pacific side of Mexico, some twenty-five miles inland from the ocean, and about thirty miles south-east of the Chiapas border.

These two species of *Phalepsus* described here are yet another example of faunal divergence on either side of the central highlands.

ABSTRACT

In an examination of the Alfons Dampf collection, preparatory to monographing the Pselaphidae of Mexico and Guatemala, two new genera, one new subgenus, twenty-six new species, three new subspecies, and two new varieties are described.

Thirty-nine previously described Neotropical species are discriminated and given additional zoögeographic records, as follows: Fletcher 6, Park 1, Raffray 14, Reitter 2, Schaufuss 6, Sharp 9, and Silvestri 1.

This brings the number of described species and infraspecific categories to 963 for the Neotropical Region and 193 for Mexico and Guatemala.

Reichenbachia stroheckeri Park (1942) of the Panama Canal Zone is reduced to a southern subspecies of *Reichenbachia appendiculata* Raffray (1904) of Mexico.

Variation in the genus *Reichenbachia* is discussed, and keys to males and to females of this genus known from Mexico and Guatemala are presented. Keys are given to the Mexican species of *Mitona*, and to the species of *Caligocara*, *Rhexius* and *Sebaga*.

Two general hypotheses previously entertained (Park, 1943) concerning pselaphids of neotropical Mexico and Guatemala are given further substantiation ; namely, that these beetles form a relatively homogeneous faunal unit ; and that the species of the Atlantic and the Pacific drainages are relatively distinct from each other. Although the biotic provinces of Smith (1940), based on lizard data, are utilized where feasible, there is insufficient zoögeographic information as yet to test these provinces thoroughly with respect to the Pselaphidae.

SUMARIO²

En un examen de la colección Alfons Dampf y como prelude a escribir una monografía de las Pseláfides de México y Guatemala, se describen dos géneros nuevos, un subgénero nuevo, veintiséis especies nuevas, tres subespecies nuevas, y dos variedades nuevas.

Se distinguen treinta y nueve especies neotropicales previamente descritas, de las cuales se hacen memorias zoogeográficas adicionales. Estas son las que siguen : Fletcher 6, Park 1, Raffray 14, Reitter 2, Schaufuss 6, Sharp 9, y Silvestri 1.

Esto lleva a 963 para la region neotropical y 193 para México y Guatemala, el número de especies descritas y categorias infraespecificas.

La *Reichenbachia stroheckeri* Park (1942) de la Zona del Canal de Panama se reduce a una subespecie meridional de la *Reichenbachia appendiculata* Raffray (1904) de México.

Se discute la variación del género *Reichenbachia*, y se presentan llaves de los machos y las hembras de este género conocidos como de México y Guatemala. Se dan llaves a la especie mejicana de *Mitona* y a las especies de *Caligocara*, *Rhexius* y *Sebaga*.

Se presentan más pruebas de dos hipótesis generales previamente sostenidas (Park, 1943) relativas a las Pseláfides de las regiones neotropicales mejicanas y guatemaltecas, es a saber, que estos escarabajos forman una unidad faunal relativamente homogénea, y que las especies de la cuenca del Atlántico y la del Pacífico son relativamente distintas las unas de las otras.

Aunque se sirve, en cuanto sea practicable, de las provincias bióticas de Smith (1940), basadas en datos referentes a los lagartos, todavía faltan informes zoogeográficas suficientes para poner estas provincias a prueba concluyente respecto de las Pseláfides.

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PLATE I

- I. *Crypborhinula trimioides* (Sharp) . Male antenna, mesial face.
2. *C. trimioides* (Sharp). Male anterior tarsus, lateral face.
3. *C. trimioides* (Sharp). Male anterior tarsus, ventral face.
4. *Scalenarthrus cavicornis* (Raffray) . Male antenna, mesial face.
5. *Pselaphellus mexicanus* new species. Anterior leg, posterior face.
6. *P. mexicanus* new species. Maxillary palpus, dorsolateral face.
7. *Scalenarthrus inflatus* Fletcher. Male eleventh antennal segment, mesial face; ventral face to left.
8. *Sebaga lamellata* Raffray. Male pronotum, showing the prominent, transverse, rugose antebasal platform.
9. *S. neotropica* new species. Male pronotum, with complex antebasal platform.
10. *Scalenarthrus concavus* Fletcher. Male middle coxae and associated structures.

PLATE I

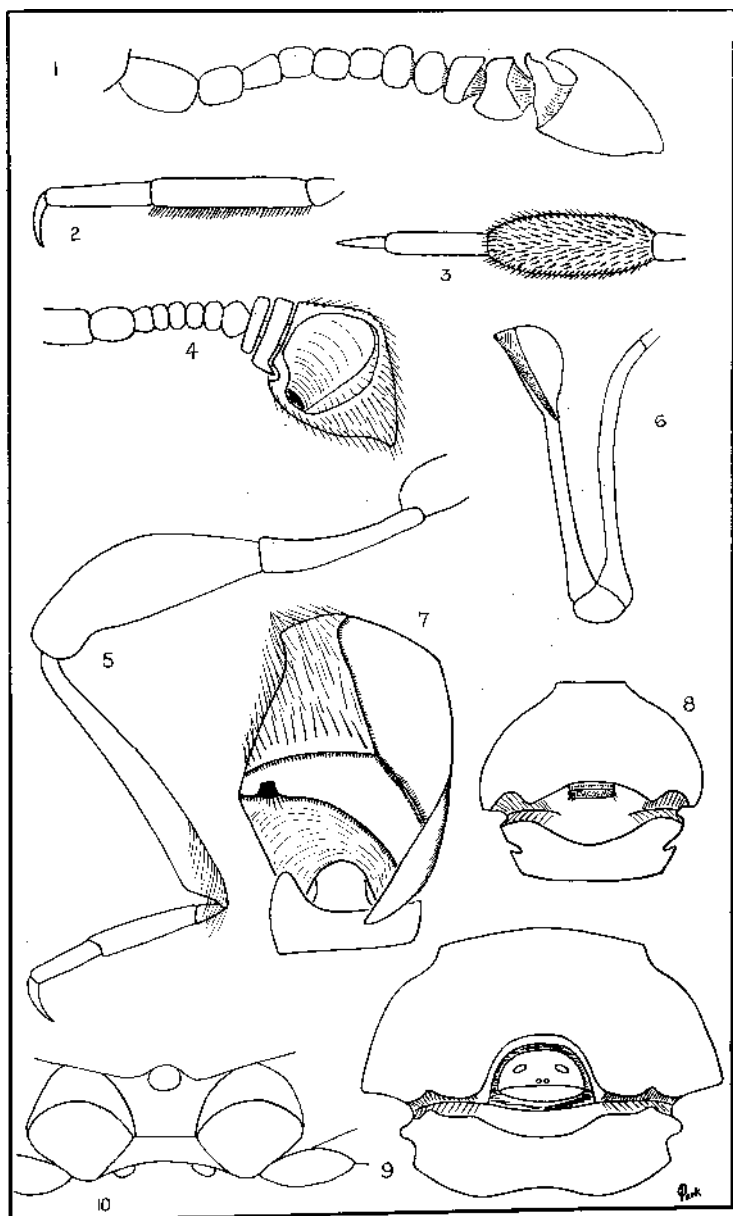
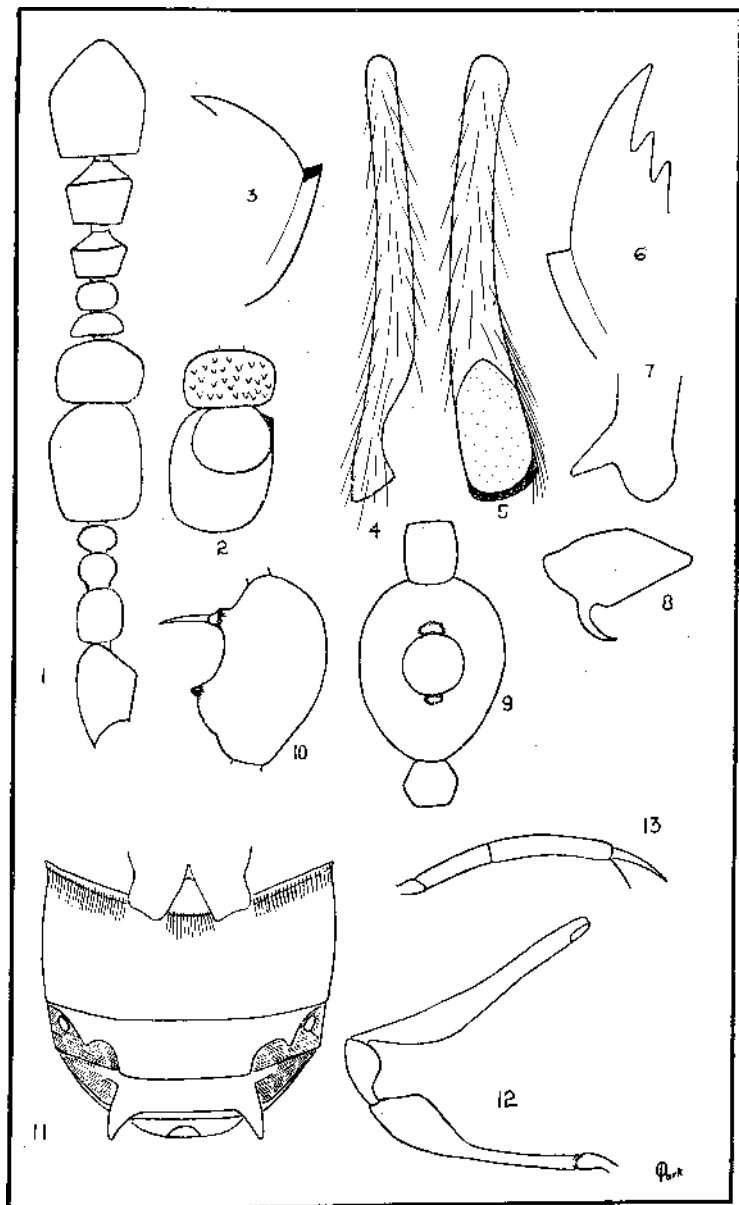


PLATE II

1. *Reichenbachia sallaei* (Sharp). Male antenna, dorsal face.
2. *R. sallaei* (Sharp). Ventral surface, male fifth and sixth antennal segments. See Pl. VII, 14 for range of variation.
3. *R. sallaei* (Sharp). Male right mandible, with external tooth.
4. *R. sallaei* (Sharp). Male posterior tibia, dorsal face.
5. *R. sallaei* (Sharp). Male posterior tibia, lateral, face, with distal concavity stippled.
6. *R. sarcinaria* (Schaufuss). Male left mandible.
7. *R. sarcinaria* (Schaufuss). Apex of middle tibia.
8. *R. sarcinaria* (Schaufuss). Male middle trochanter.
9. *R. sarcinaria* (Schaufuss). Ventral surface, male fourth, fifth, and sixth antennal segments.
10. *R. sarcinaria* (Schaufuss). Male fifth antennal segment, mesial face.
11. *Cupila mexicana* new species. Abdomen, ventral aspect.
12. *Phalepsus neotropicus* new species. Maxillary palpus.
13. *P. neotropicus* new species. Posterior tarsus.

PLATE II



PLATEIII

1. *Reichenbachia a. appendiculata* Raffray. Dorsal aspect of head and mesial aspect of first five antennal segments.
2. *Bythinoplectus denticornis* Raffray. Dorsal aspect of head and antenna of male.
3. *B. denticornis* Raffray. Dorsal aspect of head of female.
4. *Sebaga centralis ocampi* new subspecies. Male pronotum.
5. Antebasal platforms of certain *Sebaga*. Column on left showing platforms seen from above; on right seen from the side. Top row, *centralis* Raffray (Venezuela); middle row, *ocampi* new subspecies; bottom row, *raffrayi* Park (Canal Zone).
6. *Scalenarthrus globosus* Fletcher. Male tenth and eleventh antennal segments, mesial face; ventral face to right.
7. *Reichenbachia appendiculata strobeckeri* Park. Frontoclypeal region of male. Contrast with Fig. 1.

PLATE III

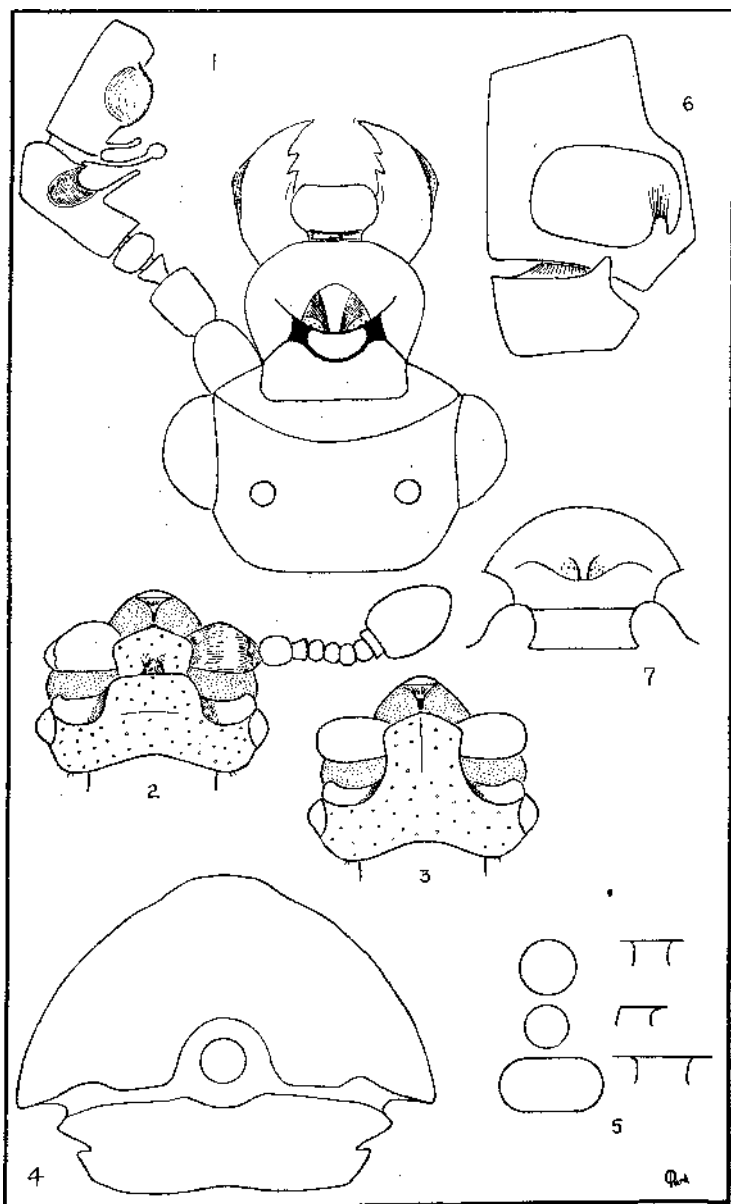


PLATE IV

- 1 *Reichenbachia carinifer* Fletcher. Dorsal aspect of head, and mesial aspect of first five antennal segments of male.
- 2 *R. dampfi* new species. Dorsal aspect of head, and mesioventral aspect of first seven antennal segments of male.
- 3 *Arthmius curvicornis* (Schaufuss). Mesial aspect of male antenna. See P1. VI, 3 for range of variation.
- 4 *Reichenbachia guerrensis* new species. Dorsal aspect of male fifth and sixth antennal segments.
- 5 *R. guerrensis* new species. Ventral aspect of male fifth and sixth antennal segments.
- 6 *R. guerrensis* new species. Dorsal aspect of female fourth to seventh antennal segments.
- 7 *Eupsenius mexicanus* Raffray. Separation of posterior coxae.
- 8 *E. grouvellei* Raffray. Separation of posterior coxae.

PLATE IV

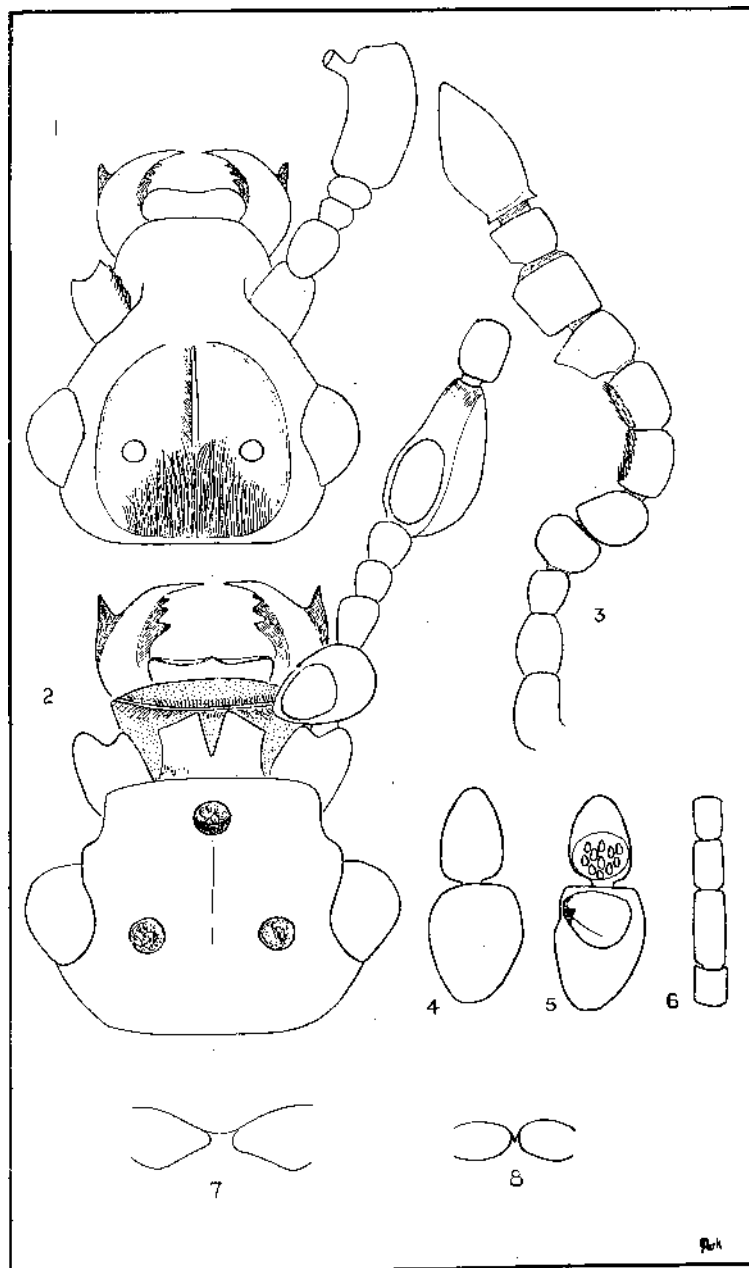


PLATE V

1. *Caligocara carinifera* new genus and species. Ventral surface of meso- and metathorax and abdomen of male (right), and of female (left) ; coxae stippled.
2. *C. carinifera* new genus and species. Anterior face of prothorax, both sexes.
3. *C. carinifera* new genus and species. Pronotum.
4. *Mitona simulatrix* (Sharp) . Male anterior leg, lateral face.
5. *M. simulatrix* (Sharp) . Male anterior leg, ventral face.
6. *Eupsenius mexicanus* Raffray. Male antenna.

PLATE V

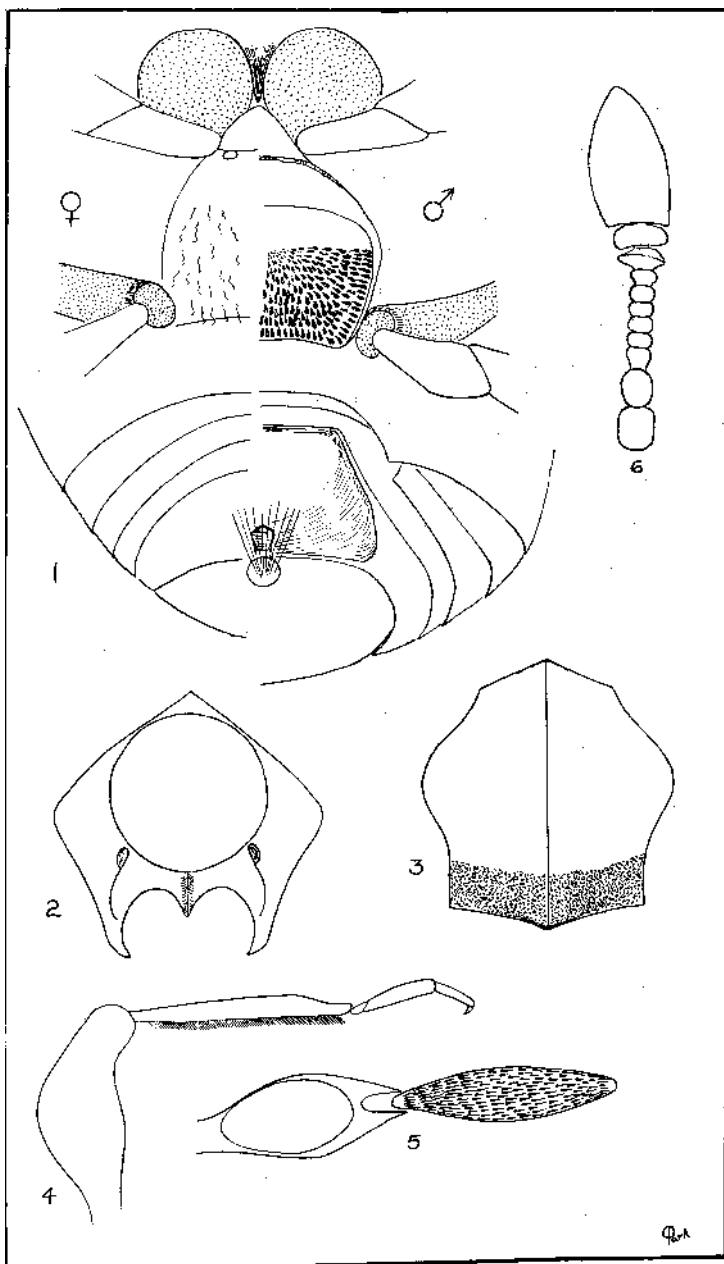


PLATE VI

1. *Reichenbachia phantasmoidea* new species. Dorsal aspect of head and first six antennal segments of male.
2. *R. phantasmoidea* new species. Ventral aspect of fifth and sixth antennal segments of male.
3. *Arthmius curvicornis* (Schaufuss) . Mesial aspect of male antenna. See Pl. IV, 3 for range of variation.
4. *Cryphorhinula oedipus* (Sharp) . Male anterior tarsus, lateral face.
5. *C. oedipus* (Sharp) . Male anterior tarsus, ventral face.
6. *C. oedipus* (Sharp). Middle coxae and associated structures.
7. *C. oedipus* (Sharp) . Dorsal aspect of male head and antenna. Minute frontal tubercle is variable.
8. *Dranisaxa gloydi* new genus and species. Male posterior tarsus, lateral face.
9. *D. gloydi* new genus and species. Male anterior and middle tarsus, lateral face.
10. *D. gloydi* new genus and species. Male anterior and middle tarsus, ventral face.

PLATE VI

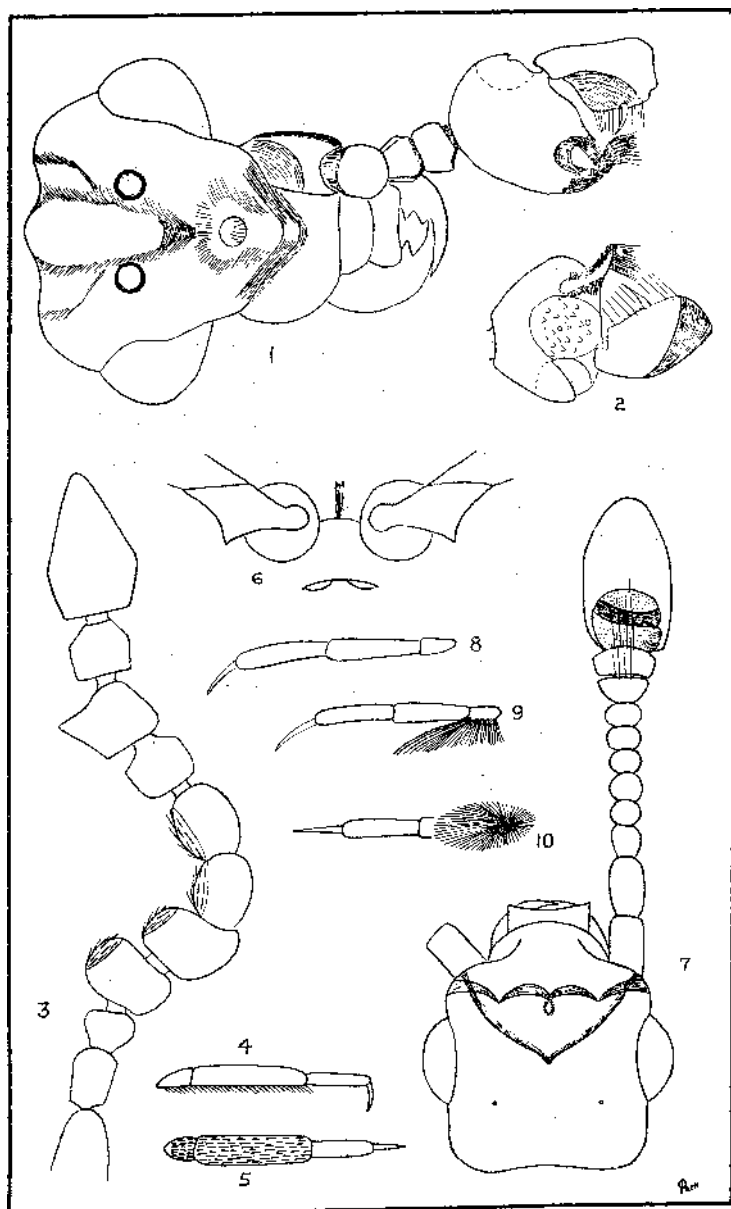


PLATE VII

2. *Reichenbachia nominata* (Sharp). Male head, dorsal aspect.
R. nominata (Sharp). Male antenna] segments II to VI, dorsal aspect.
R. nominata (Sharp). Male antennal segments II and III, lateral aspect.
4. *R. sonorensis* new species. Male antennal segments II to VI, dorsal aspect.
5. *R. sonorensis* new species. Male antenna] segments II and III, lateral aspect. (Fig. 1 to 5 drawn to same scale.)
6. *R. jaliscoensis* new species. Male posterior tibia, mesial face.
7. *R. jaliscoensis* new species. Female posterior tibia, mesial face.
8. *R. jaliscoensis* new species. Male antennal segments I to VII, dorsal aspect.
9. *R. jaliscoensis* new species. Female antennal segments V and VI, dorsal aspect.
10. *R. jaliscoensis* new species. Male anterior tarsal claw.
11. *R. jaliscoensis* new species. Female tarsal claw.
12. *R. jaliscoensis* new species. Left mandible, both sexes.
13. *R. diversula* Raffray. Male head and first six antennal segments, dorsal aspect.
14. *R. sallaei* (Sharp). Male fifth and sixth antennal segments. See Pl. II, 2 for range of variation.
15. *R. netтели* new species. Male fifth and sixth antennal segments, ventral aspect.
16. *R. dentisterna* new species. Male fifth and sixth antennal segments, ventral aspect.

PLATE VII

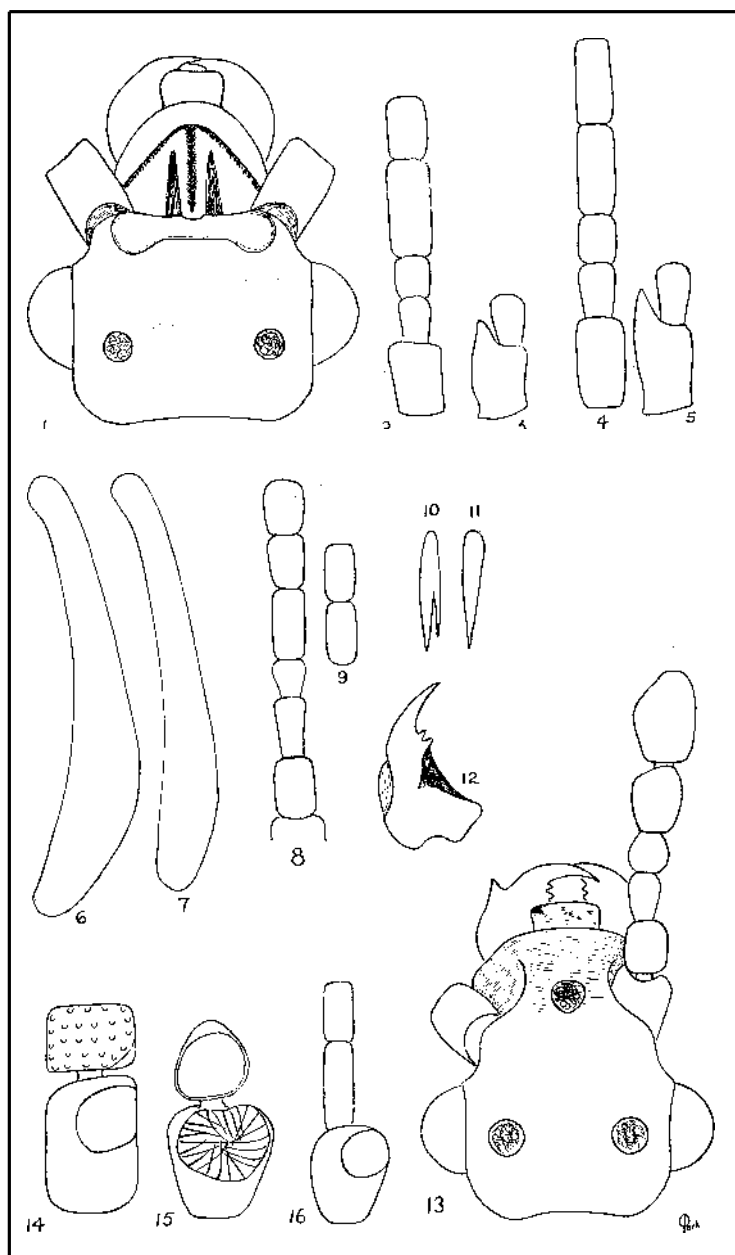


PLATE VIII

1. *Reichenbachia guatemalensis* Fletcher. Male posterior tibia, lateral face.
2. *R. quotuma* new species. Male posterior tibia, lateral face.
3. *R. latipes* Fletcher. Male posterior tibia, lateral face.
4. *R. latipes* Fletcher. Male middle femur, lateral face.
5. *R. quotuma* new species. Male middle femur, lateral face.
6. *R. guatemalensis* Fletcher. Male left mandible.
7. *R. latipes* and *R. quotuma*. Male left mandible.
8. *R. falsa* Raffray. Male head, dorsal aspect.
9. *R. falsa* Raffray. Male fourth, fifth and sixth antennal segments, dorsal aspect.
10. *R. falsa* Raffray. Male fifth and sixth antennal segments, mesial aspect.
11. *R. falsa* Raffray. Male fifth antennal segment, ventral face.
12. As for Fig. 11, to show range of variation in this species.

PLATE VIII

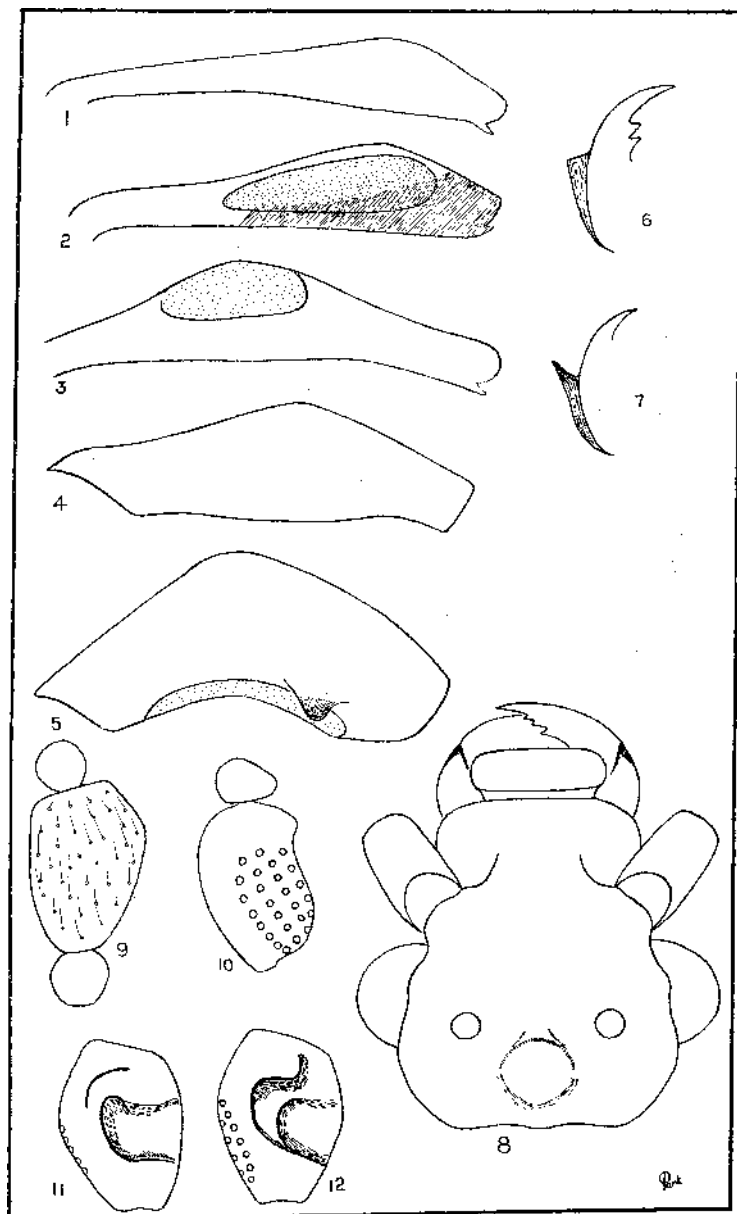


PLATE IX

1. *Anchylarthron ctenisternum* new species. Female antenna of *eleven* segments, mesial face.
2. *A. ctenisternum* new species. Male antenna of ten segments, mesial face. On same scale as Fig. 1.
3. *Reichenbachia pubescens* (Schaufuss) . Female antenna, mesial face.
4. *Anchylarthron ctenisternum* new species. Middle coxae and associated structures.
5. *Reichenbachia pubescens* (Schaufuss) . Middle coxae and associated structures.
6. *R. juxtairrita* new species. Antenna, dorsal face.
7. *Phamisis myrmophilus* Silvestri. Apex of third segment of left middle tarsus, to show hifid primary claw and the secondary claw. Slide-mount, 700 diameters.

PLATE IX

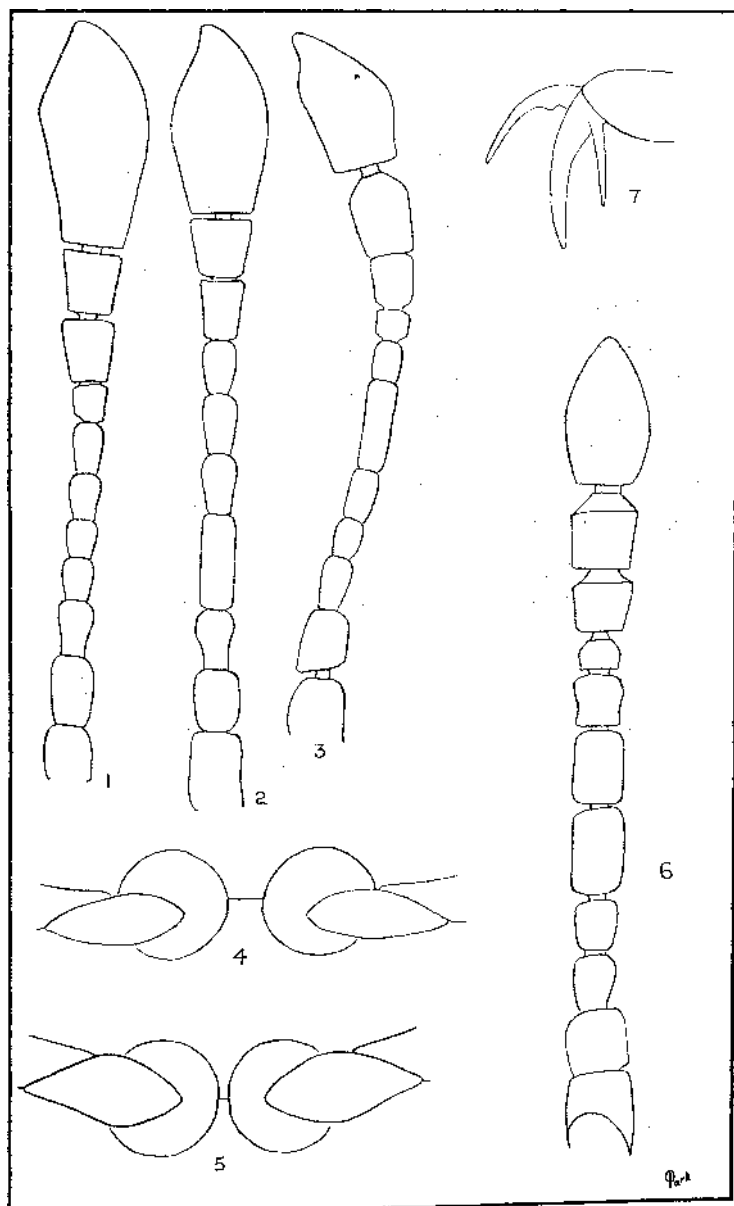


PLATE X

1. *Phalepsus neotropicus* new species. Aedeagus, *a*— dorsal aspect, and *b*— apical aspect.
2. *Mitona simulatrix* (Sharp), and *M. sotoi* new species. Pronotum and base of elytra, both sexes.
3. *M. simularix* (Sharp), and *M. sotoi* new species. Middle coxae (stippled), and associated structures, both sexes.
4. *Al. simulatrix* (Sharp). Diagnostic, transverse metasternal lamina and ventral surface of abdomen, of male.
5. *M. sotoi* new species. Last tergite, and notched apical margin of last sternite of male. Contrast with same area of Fig. 4.
6. *M. sotoi* new species. Ventral surface of abdomen of female.
7. *M. simulatrix* (Sharp). Last tergite and sternite of female.
8. *Panabachia vulnerata* (Sharp). Male pronotum and base of right elytron, dorsal aspect.
9. *P. vulnerata* (Sharp). Male pronotum, lateral aspect.
10. *P. vulnerata* (Sharp). Male middle coxae, and associated structures.

PLATE X

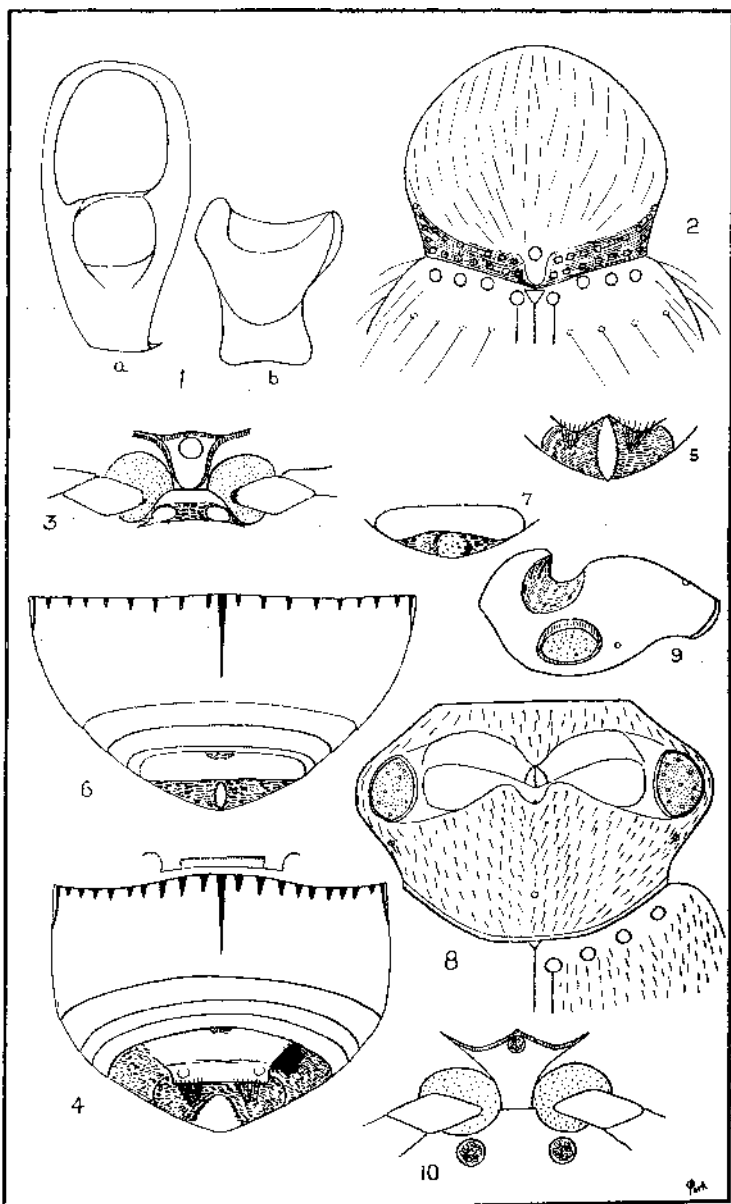


PLATE XI

Cupila Cutrimia mexicana **new subgenus and species.**

Dorsal aspect of type, lateral aspect of an elytron, and an enlarged capitulate seta from the ventral surface of the head. *See* also P1. II, 11.

PLATE XI

